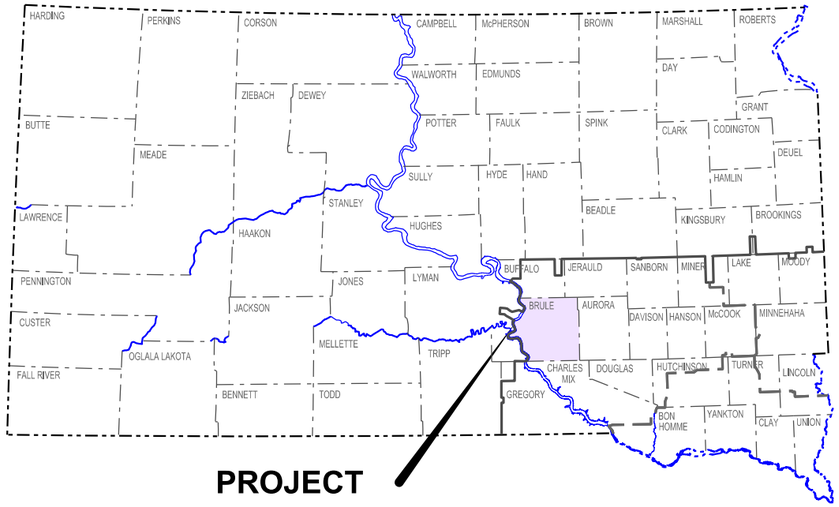
PLOT SCALE - 1:44480




# STATE OF SOUTH DAKOTA
# DEPARTMENT OF TRANSPORTATION
## PLANS FOR PROPOSED

# PROJECT IM 0020(00)
# INTERSTATE 90
# BRULE COUNTY

PCN 0A5E

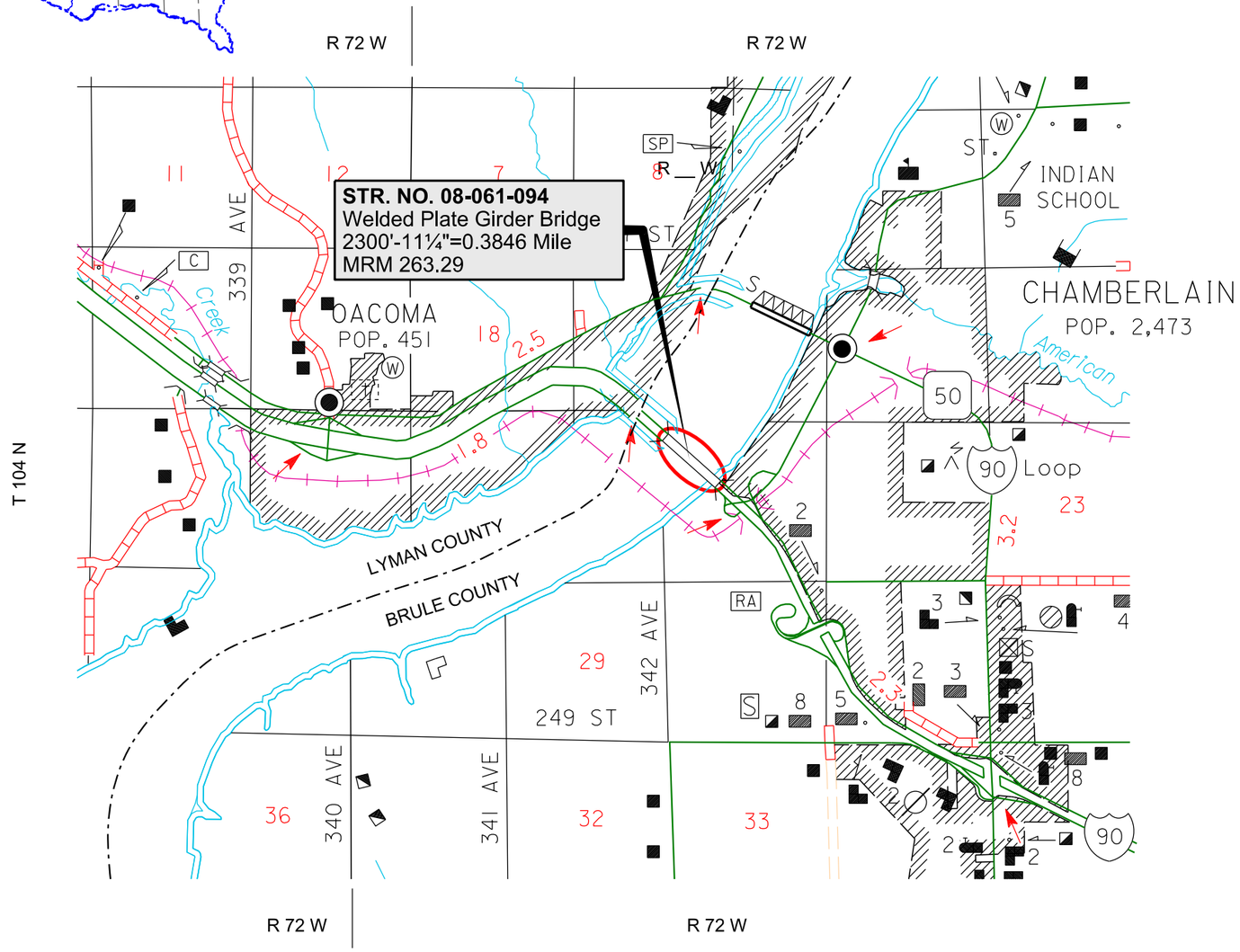
BRIDGE CLEANING

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | IM 0020(00) | 1 | 24 |

Plotting Date: 10/26/2026

## INDEX OF SHEETS


| | | |
|---|---|---|
| Sheet | 1 | Layout Map & Index of Sheets |
| Sheet | 2 | Estimate of Quantities |
| Sheets | 3-4 | Environmental Commitments |
| Sheet | 5 | Plan Notes |
| Sheets | 6-9 | Traffic Control |
| Sheets | 10-12 | Example Photos of Typical Existing Debris |
| Sheets | 13-24 | Original Construction Plans |


**DESIGN DESIGNATION**
**I90 EBL**

| | |
|---|---|
| ADT(2025) | 4345 |
| ADT(2045) | 6205 |
| DHV | 1026 |
| D | 50% |
| T DHV | 12.8% |
| T ADT | 28.1% |
| V | 80 MPH |

**DESIGN DESIGNATION**
**I90 WBL**

| | |
|---|---|
| ADT(2025) | 4345 |
| ADT(2045) | 6205 |
| DHV | 1026 |
| D | 50% |
| T DHV | 12.8% |
| T ADT | 28.1% |
| V | 80 MPH |

5

December 9, 2026

PLOTTED FROM - TRM1INT16

PLOT NAME - 1

FILE - ...\PRJ2027\BRUL0A5E\TTTL0A5E.DGN

# ESTIMATE OF QUANTITIES

Rev. 10/29/26 pm

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | IM 0020(00) | 2 | 24 |

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| 009E0010 | Mobilization | Lump Sum | LS |
| 009E4100 | Construction Schedule, Category I | Lump Sum | LS |
| 634E0110 | Traffic Control Signs | 273.9 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0275 | Type 3 Barricade | 1 | Each |
| 634E0310 | Temporary Flexible Vertical Markers (Tabs) | 5,942 | Ft |
| 634E0420 | Type C Advance Warning Arrow Board | 1 | Each |
| 634E0600 | 4" Temporary Pavement Marking Tape Type I | 960 | Ft |
| 634E1255 | Contractor Furnished Vehicle Speed Feedback Sign | 1 | Each |
| 900E7020 | Bridge Cleaning | Lump Sum | LS |

# ENVIRONMENTTAL COMMITMENTS

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | IM 0020(00) | 3 | 24 |

## ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/doing-business/environmental/about-environmental/>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

## COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight, and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

### Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

## COMMITMENT B4: BALD AND GOLDEN EAGLE

Bald and/or Golden eagles are known to occur in this area.

### Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

## COMMITMENT B6: MIGRATORY BIRDS WORK RESTRICTION

Migratory birds may use structures for nesting, which primarily occurs from April 1st-August 31st.

### Action Taken/Required:

All Swallows are state and federally protected under the Migratory Bird Treaty Act of 1918. It is illegal for any person to take, possess, transport, sell, or purchase them or their parts, such as feathers, nests, or eggs, without a permit. Active nests with eggs or chicks inside may not be touched or destroyed without a permit from the U.S. Fish and Wildlife Service (USFWS). Inactive (empty) nests do not require a permit to destroy. Nest or bird removal applications must be justified with strong, compelling reasons such as a health or safety hazard towards humans and/or birds or damage to property.

Construction activities should not occur in the locations listed in the table below during the migratory bird work restriction without prior approval from the SDDOT Environmental Office to avoid conflicts with nesting migratory birds.

If necessary, you may do the following to prevent birds from nesting:

Before birds arrive:
Remove old nests and any traces of mud. Since old nests can be reused, remove any potential nests before the birds arrive from winter migration.

Place physical barriers on potential nesting sites to prevent birds from nesting. You may use products such as coroplast, polytetrafluoroethylene (Teflon), Bird Slide™, plexiglass, plastic sheeting, or silicon-based paint coated to the surface. Physical barriers may be a permanent deterrent in preventing birds from nesting in nuisance locations.

After birds arrive:
Remove mud nests frequently, in between nest construction. They may eventually give up on that site if they are not successful in building a nest. You may only destroy nests that do not have eggs or chicks within.

Play sounds of alarm and distress calls of cliff and barn swallows to disrupt nest construction.

If project activities cannot be conducted outside of the seasonal restriction the Contractor will notify the Project Engineer and the Environmental Office Biologist (605-773-3309) to coordinate with the USFWS.

## COMMITMENT C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

### Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx >

South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
< https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

# ENVIRONMENTTAL COMMITMENTS

**COMMITMENT H: WASTE DISPOSAL SITE**

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

**Action Taken/Required:**

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, “No Dumping Allowed”.

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.
Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

**COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES**

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

**Action Taken/Required:**

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility/The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

**BRIDGE CLEANING**

1. The following locations on the bridge will be cleaned of bird guano, bird nests, sand, gravel, and loose debris:
   a. Top flange, bottom flange, webs, horizontal stiffeners, vertical stiffeners, and all other horizontal surfaces on all girders, floor beams, and stringers.
   b. Girder cross bracing.
   c. Girder to floor beam gusset plates.
   d. Top of abutment seats.
   e. Bridge bearings.
2. The cleaning method will remove external debris only and will not be used to remove stains, grease, or paint. The cleaning operation will not damage or remove tightly adhered paint. The cleaning method will be provided by the Contractor and approved by the Engineer. Prior to widespread use on the structure, the Contractor will test clean an area to demonstrate that the cleaning method will remove external debris without damaging the tightly adhered paint.
3. Measurement for the contract item Bridge Cleaning will not be made. All costs associated with cleaning the locations specified in note number 1, including labor, equipment, materials, and incidentals will be included in the contract lump sum price for Bridge Cleaning.

## SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

## GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

## LANE CLOSURES

Interstate lane closures will be removed when work will not be occurring for a period of 3 or more calendar days. Activities that do not involve workers being present, such as curing time for concrete, constitute work. Lane closures will not be set up on a Friday if no work will be occurring on Saturday or Sunday. In these cases, the lane closure will be installed on Monday.

## WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

## TEMPORARY PAVEMENT MARKING

Temporary flexible vertical markers (tabs) may be used as detailed in the specifications.

Temporary pavement marking paint will not be allowed on the final lift of asphalt surfacing. Temporary pavement marking paint will not be allowed on the chip seal, fog seal, or flush seal. Temporary flexible vertical markers (tabs) must be used on the final lift of asphalt surfacing. The Contractor may use tabs with covers, uncovering them for the chip seal, fog seal, or flush seal. As an alternative, the Contractor may install new tabs for the fog seal or flush seal.

## TEMPORARY PAVEMENT MARKING

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

## CONTRACTOR FURNISHED VEHICLE SPEED FEEDBACK SIGN

The Contractor will provide 1 vehicle speed feedback signs to monitor traffic speeds on designated routes at locations specified in the field by the Engineer.

The vehicle speed feedback sign assembly will include a speed limit sign mounted in conjunction with the vehicle speed feedback display. The speed display will not flash vehicle speeds exceeding the speed limit nor any other messages.

All costs associated with furnishing, maintaining, transporting, relocating if necessary, and removing the vehicle speed feedback signs from locations specified by the Engineer will be incidental to the contract unit price per each for "Contractor Furnished Vehicle Speed Feedback Sign".

## ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

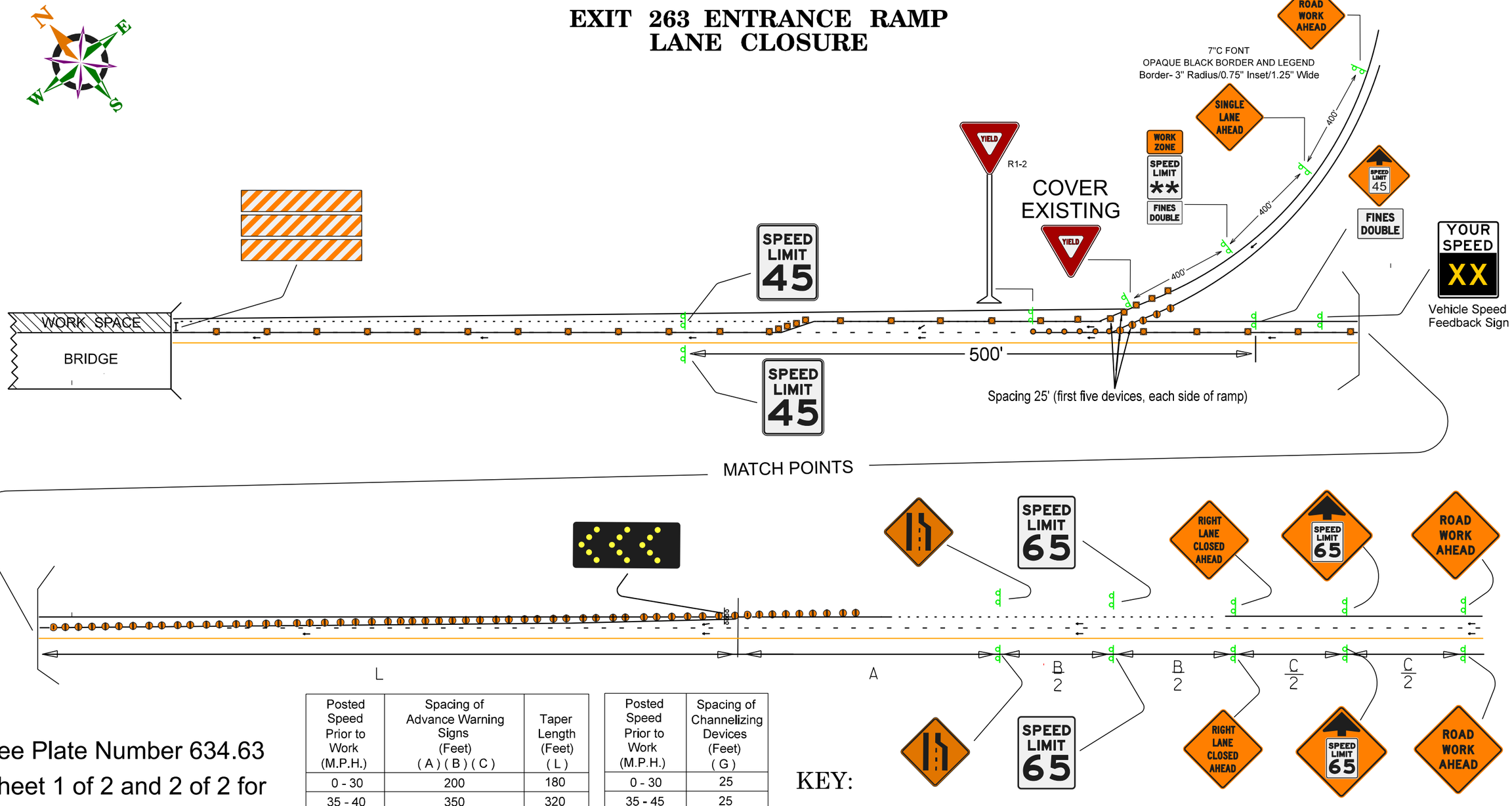
| | | EXPRESSWAY / INTERSTATE | | | |
|---|---|---|---|---|---|
| SIGN CODE | SIGN DESCRIPTION | NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
| R1-2 | YIELD | 1 | 36" | 3.9 | 3.9 |
| R2-1 | SPEED LIMIT 65 | 3 | 36" x 48" | 12.0 | 36.0 |
| R2-1 | SPEED LIMIT 45 | 3 | 36" x 48" | 12.0 | 36.0 |
| R2-1 | SPEED LIMIT 80 | 1 | 36" x 48" | 12.0 | 12.0 |
| R2-6aP | FINES DOUBLE (plaque) | 2 | 36" x 24" | 6.0 | 12.0 |
| W3-5 | SPEED REDUCTION AHEAD (65 MPH) | 2 | 48" x 48" | 16.0 | 32.0 |
| W4-2 | LEFT or RIGHT LANE ENDS (symbol) | 2 | 48" x 48" | 16.0 | 32.0 |
| W20-1 | ROAD WORK AHEAD | 3 | 48" x 48" | 16.0 | 48.0 |
| W20-5 | LEFT or RIGHT LANE CLOSED AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| G20-2 | END ROAD WORK | 1 | 48" x 24" | 8.0 | 8.0 |
| G20-5aP | WORK ZONE (plaque) | 1 | 36" x 24" | 6.0 | 6.0 |
| SPECIAL | SINGLE LANE AHEAD | 1 | 48" x 48" | 16.0 | 16.0 |
| | | EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT | | | 273.9 |

Plot Scale - 1:200.655
Plotted From - TRM13315
Plot Name - $$dolname$$
File - ...\0A5E Standard Plate Container.dgn

Plotting Date: 09/30/2026

# TRAFFIC CONTROL

## EXIT 263 ENTRANCE RAMP
## LANE CLOSURE




See Plate Number 634.63 Sheet 1 of 2 and 2 of 2 for advanced warning and speed limit sign sequence.

| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Warning Signs (Feet) ( A ) ( B ) ( C ) | Taper Length (Feet) ( L ) |
|---|---|---|
| 0 - 30 | 200 | 180 |
| 35 - 40 | 350 | 320 |
| 45 - 50 | 500 | 600 |
| 55 | 750 | 660 |
| 60 - 65 | 1000 | 780 |
| | ( A ) ( B ) ( C ) | |
| 70-80 | 1000 1500 2600 | 960 |

| Posted Speed Prior to Work (M.P.H.) | Spacing of Channelizing Devices (Feet) ( G ) |
|---|---|
| 0 - 30 | 25 |
| 35 - 45 | 25 |
| 50 | 50 ✲ |
| 55 | 50 ✲ |
| 60 - 65 | 50 ✲ |
| 70 - 80 | 50 ✲ |

✲ Spacing is 40' for 42" cones.

KEY:

-Reflectorized Drum

-Channelizing Device

-Tubular Marker

Plot Scale - 1:200.655
Plotted From - TRM13315
Plot Name - $$dolnameS$
File - ...\0ASE Standard Plate Container.dgn

Plotting Date: 09/30/2026

| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Warning Signs (Feet) (A) (B) (C) |
|---|---|
| 0 - 30 | 200 |
| 35 - 40 | 350 |
| 45 - 50 | 500 |
| 55 | 750 |
| 60 - 65 | 1000 |
| | (A) (B) (C) |
| 70 - 80 | 1000 1500 2640 |

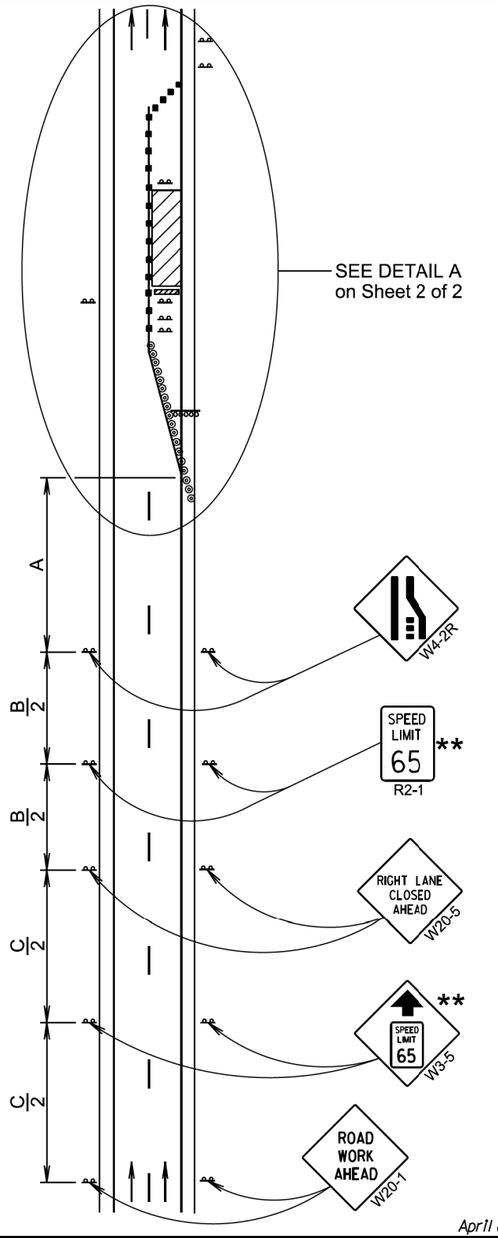
** Speed appropriate for location.

◎ Reflectorized Drum

▪ Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.




April 8, 2025

| Published Date: 2027 | SDDOT | WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS | PLATE NUMBER 634.63 |
|---|---|---|---|
| | | | Sheet 1 of 2 |

| Posted Speed Prior to Work (M.P.H.) | Spacing of Channelizing Devices (Feet) (G) | Taper Length (Feet) (L) |
|---|---|---|
| 0 -30 | 25 | 180 |
| 35 - 40 | 25 | 320 |
| 45 | 25 | 600 |
| 50 | 50 * | 600 |
| 55 | 50 * | 660 |
| 60 - 65 | 50 * | 780 |
| 70 - 80 | 50 * | 960 |

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

◎ Reflectorized Drum

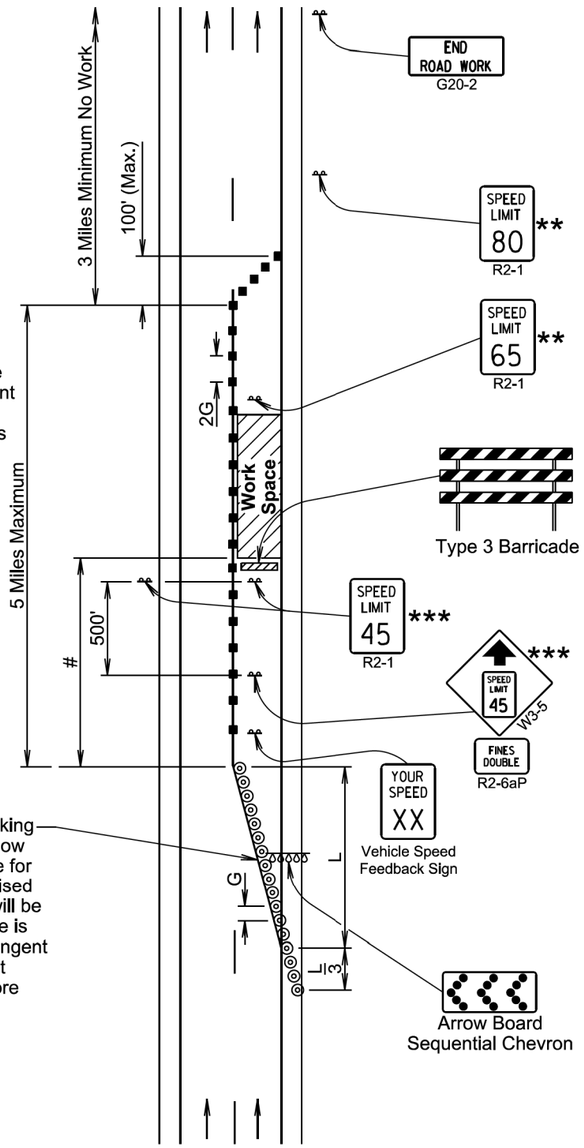
■ Channelizing Device

# The Work Space will be a minimum of 500' from the end of the taper.

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



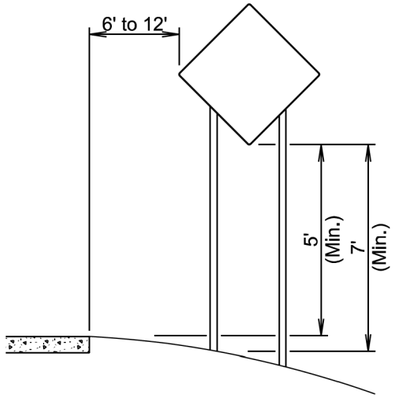

DETAIL A

April 8, 2025

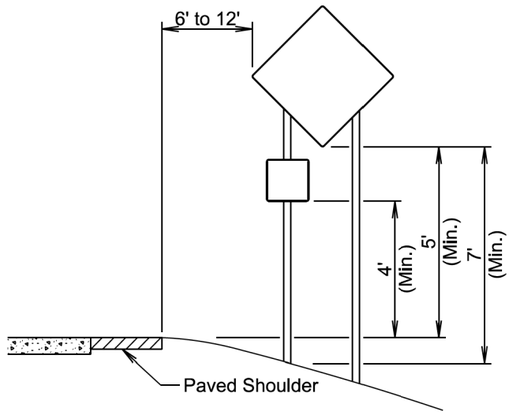
| Published Date: 2027 | SDDOT | WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS | PLATE NUMBER 634.63 |
|---|---|---|---|
| | | | Sheet 2 of 2 |

Plot Scale - 1:200.655
Plotted From - TRM13315
Plot Name - $$dolnamne$$
File - ...\0ASE Standard Plate Container.dgn

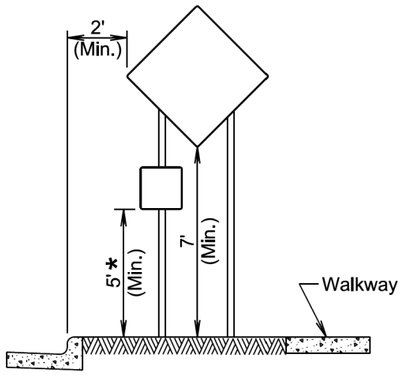
Plotting Date: 09/30/2026



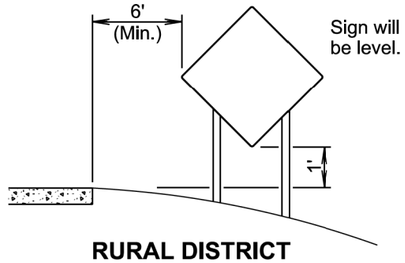

**RURAL DISTRICT**




**RURAL DISTRICT WITH SUPPLEMENTAL PLATE**




**URBAN DISTRICT**

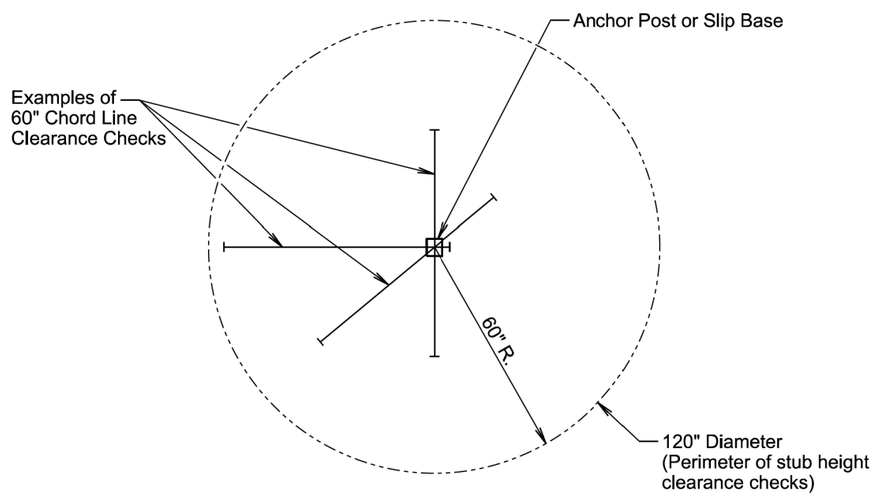



**RURAL DISTRICT**
**3 DAY MAXIMUM**
(Not applicable to regulatory signs)

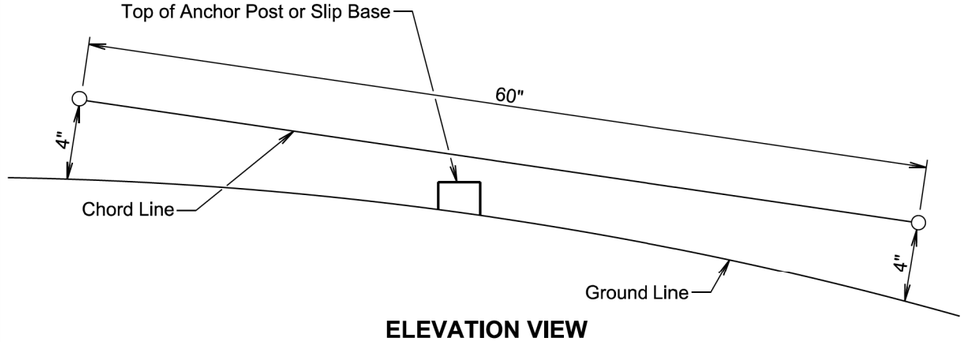
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

| Published Date: 2027 | SDDOT | CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing) | PLATE NUMBER 634.85 / Sheet 1 of 1 |
|---|---|---|---|




**PLAN VIEW**
(Examples of stub height clearance checks)




**ELEVATION VIEW**

**GENERAL NOTES:**

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

| Published Date: 2027 | SDDOT | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER 634.99 / Sheet 1 of 1 |
|---|---|---|---|

Plot Scale - 1:200.655
Plotted From - TRM113315
Plot Name - $$dolnames$$
File - ...\0ASE Standard Plate Container.dgn

# EXAMPLE PHOTOS OF TYPICAL EXISTING DEBRIS

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | IM 0020(00) | 10 | 24 |










# EXAMPLE PHOTOS OF TYPICAL EXISTING DEBRIS

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|---|---|---|---|
| | IM 0020(00) | 11 | 24 |







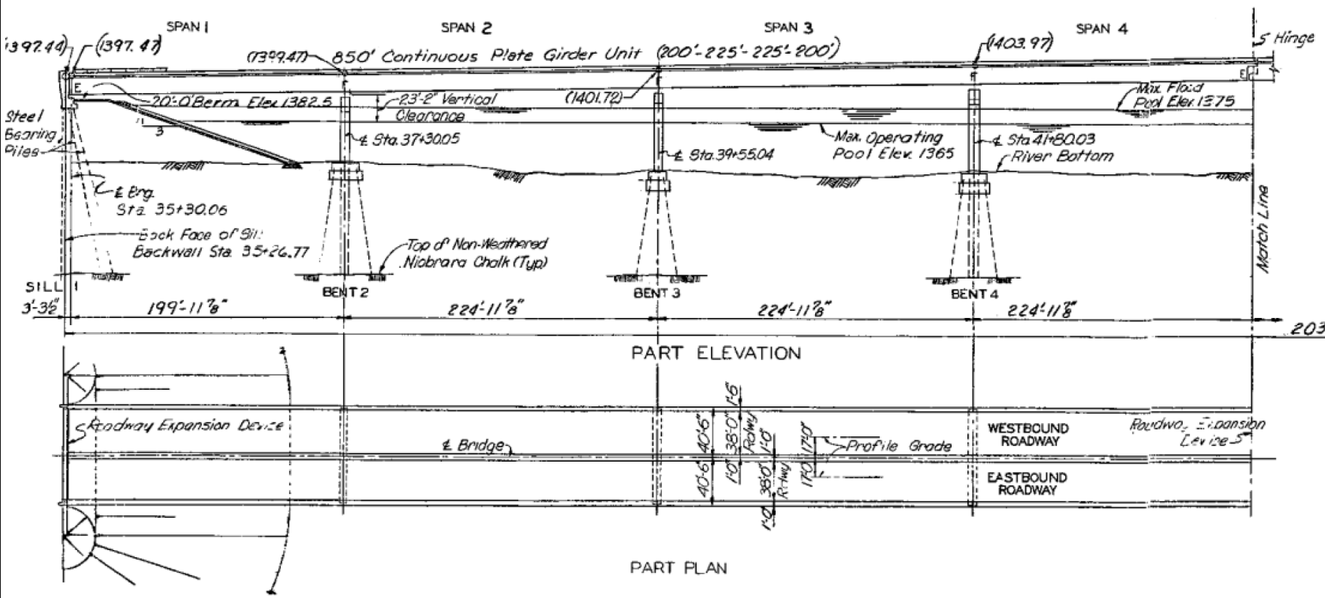


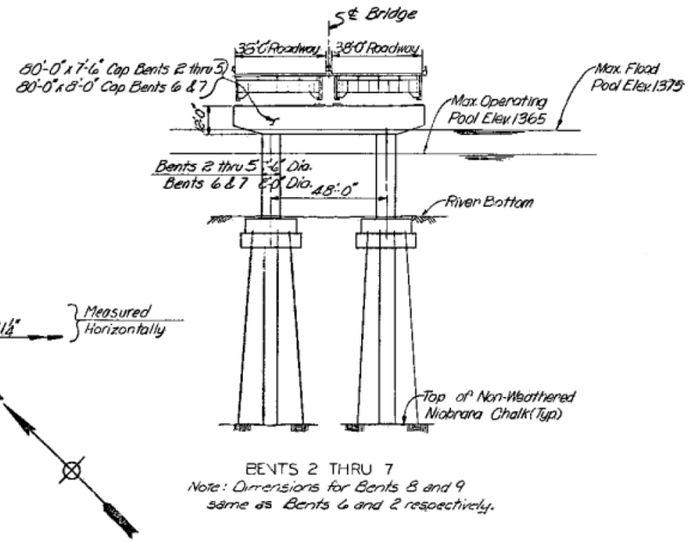
# EXAMPLE PHOTOS OF TYPICAL EXISTING DEBRIS

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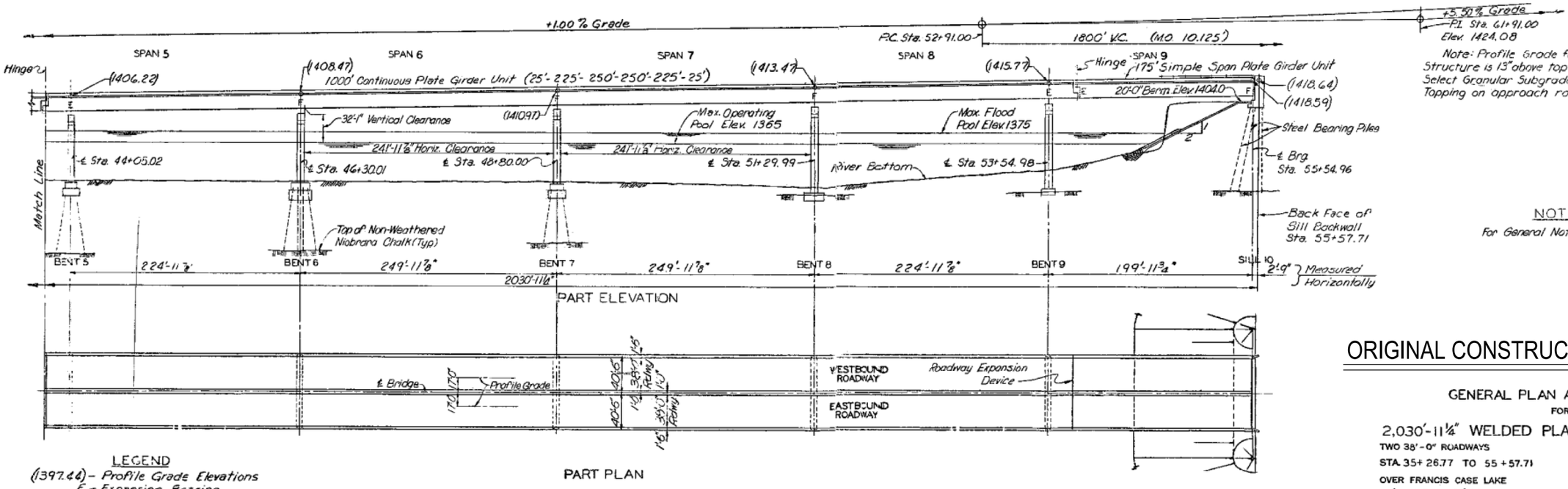





BENTS 2 THRU 7
Note: Dimensions for Bents 8 and 9 same as Bents 6 and 2 respectively.




Note: Profile Grade for the Structure is 13" above top of Select Granular Subgrade Topping on approach roadway.

NOTES

For General Notes, see Sheet 3.

LEGEND

(1397.44) - Profile Grade Elevations
E - Expansion Bearing
F - Fixed Bearing

# ORIGINAL CONSTRUCTION PLANS

## GENERAL PLAN AND ELEVATION
FOR
## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-256
OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W
Str. No. 08-059-094 / 061 BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS — HS20-44 & ALT.

STR. NO. 08-061-094

APPROVED

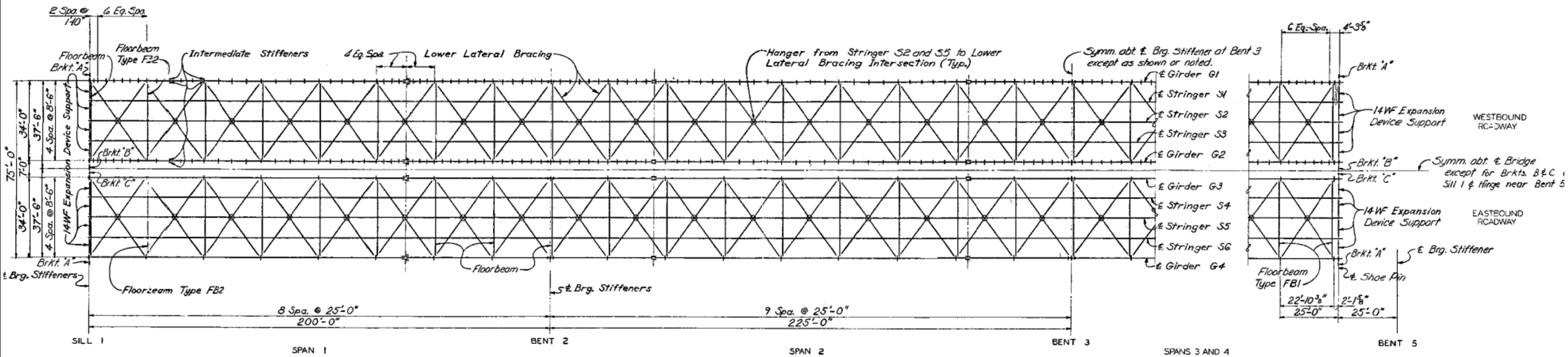
BRIDGE ENGINEER

1 OF 12


PREPARED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
CONSULTING ENGINEERS
ST. LOUIS, MISSOURI

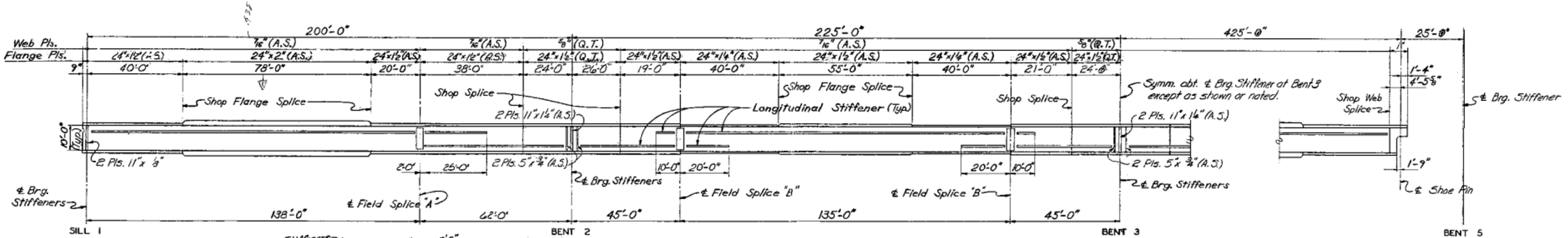

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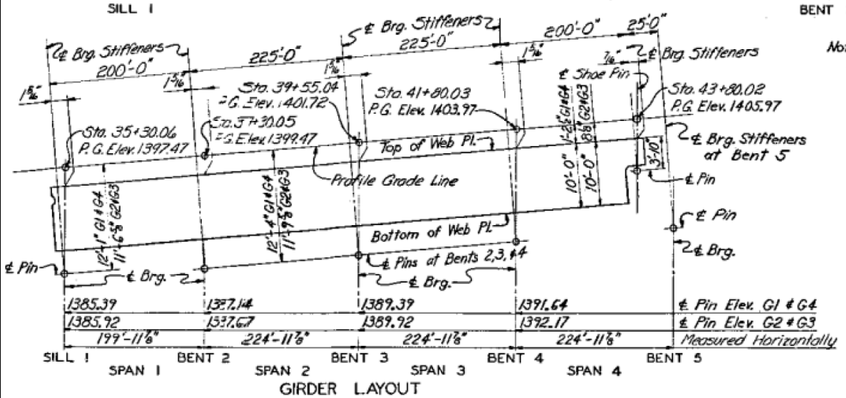

FRAMING PLAN

Note: Laterals are ST 7 WF 21.5.
All floorbeams are Type FB1 except as noted.
Intermediate Stiffeners are 2 Pls. 6" x ⅜", except at Field Splice "A" use 2 ⌐ 6 x 3½ x ⅜.
Stringers are 24 WF 68.




GIRDER ELEVATION

Note: Field Splice flange plates and intermediate stiffeners not shown.
Longitudinal Stiffener is 5½"x½" Pl. (A.S.) where web is ½"(Q.T.), elsewhere 5"x⅜" Pl.




GIRDER LAYOUT

NOTES

For General Notes, see Sheet 4.
Work this sheet with Sheets 6 and 7.
For Structural Steel Notes, see Sheet 7.
For Camber Diagram, see Sheet 7.
For Manhole Framing, see Sheet 17.

# ORIGINAL CONSTRUCTION PLANS

850' CONTINUOUS PLATE GIRDER UNIT
FOR
2,030'-11¼" WELDED PLATE GIRDER BRIDGE
TWO 38'-0" ROADWAYS — 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266
OVER FRANCIS CASE LAKE — SEC. 21-T104N-R71W
BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS
HS 20-44 & ALT.

STR. NO. 08-061-094

APPROVED

BRIDGE ENGINEER

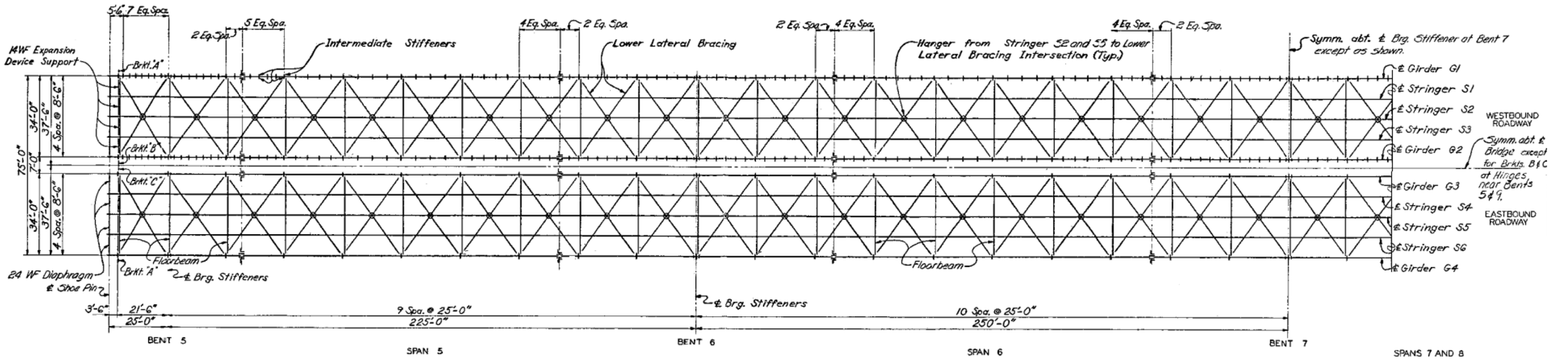


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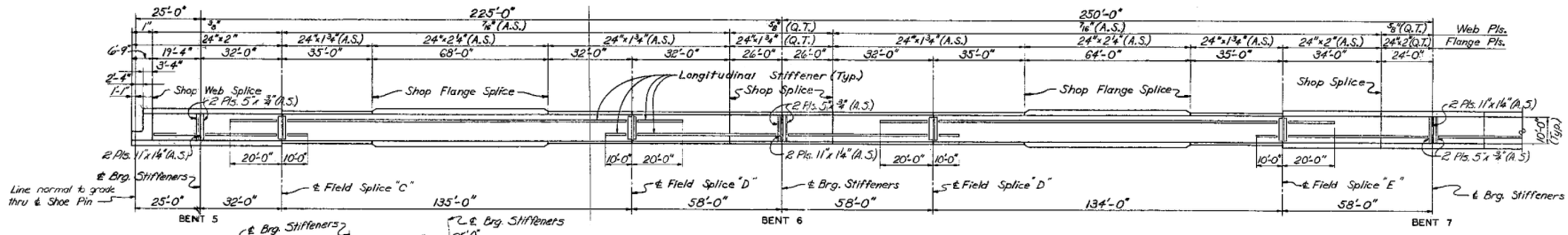
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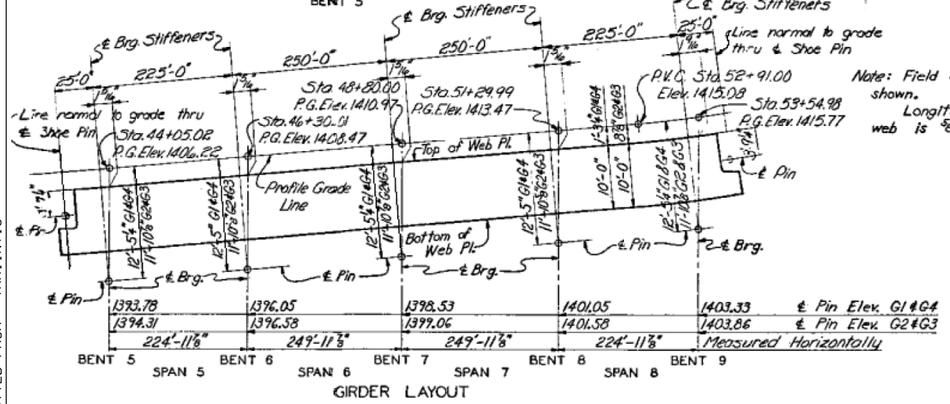

FRAMING PLAN

Note: Laterals are ST 7 WF 21.5.
All Floorbeams are Type FB1.
Intermediate Stiffeners are 2 Pls. 6" x 5/8" except at Field Splices use 2 ℄ 6 x 3/16 x 5/8.
Stringers are 24 WF 68.




GIRDER ELEVATION

Note: Field Splice flange plates and intermediate stiffeners not shown.
Longitudinal Stiffener is 5½" x ½" Pl. (A.S.) where web is 5/8" (Q.T.), elsewhere 5" x 3/8" Pl.




GIRDER LAYOUT

NOTES

For General Notes, see Sheet 3
Work this sheet with Sheets 5 and 7.
For Structural Steel Notes, see Sheet 7.
For Camber Diagram, see Sheet 7.
For Manhole Framing, see Sheet 17.

# ORIGINAL CONSTRUCTION PLANS

1000' CONTINUOUS PLATE GIRDER UNIT
FOR
2,030'-11¼" WELDED PLATE GIRDER BRIDGE
TWO 38'-0" ROADWAYS — 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266
OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W
BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS — HS 20-44 & ALT.

STR. NO. 08-061-094

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BRIDGE ENGINEER



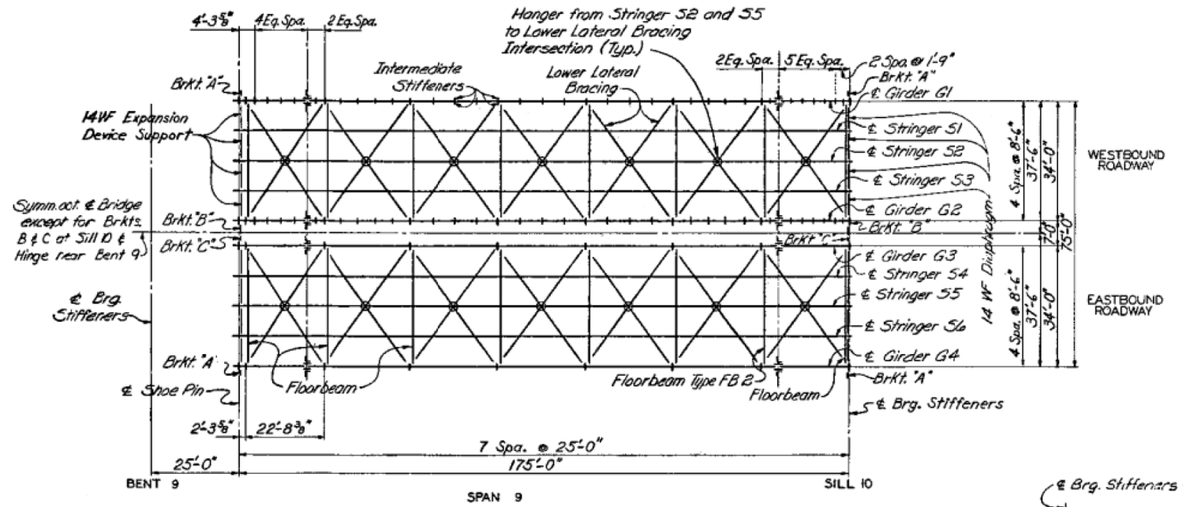
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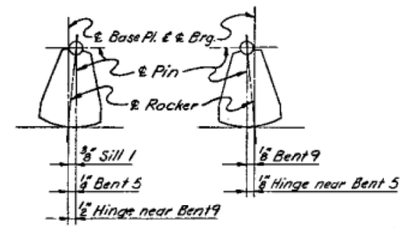
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FRAMING PLAN

Note: Laterals are ST 7 WF 21.5.
All floorbeams are Type FB1, except as noted.
Intermediate Stiffeners are 2 Pls. 6" x ⅜" except at Field Splices use 2 Pls 6 x 3⅛ x ⅜.
Stringers are 24 WF 68.

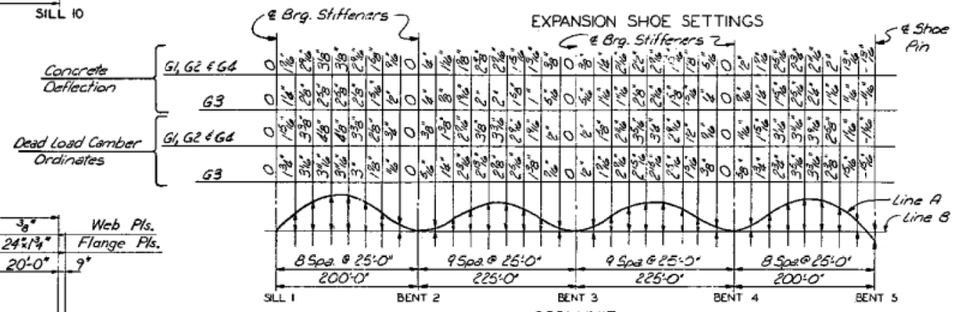



Note: The settings shown are for steel dead load only at 45°F. For temperatures at time of adjustment other than 45°F, the setting dimension to be corrected the amount shown for each 5°F change.

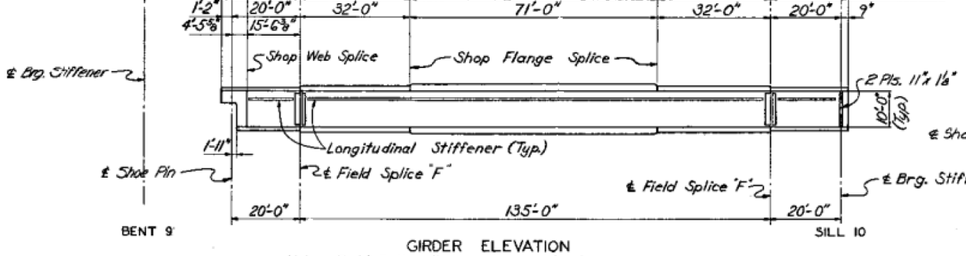
| Shoe | Correction for 5°F. Rise | Correction for 5°F. Fall |
|---|---|---|
| Sill 1 | −0.16" | +0.16" |
| Hinge Near Bent 5 | −0.36" | +0.36" |
| Bents 5 & 9 | −0.18" | +0.18" |
| Hinge Near Bent 9 | −0.26" | +0.26" |

Note: Certain temperatures may cause ℄ Pin to move to the opposite side of ℄ Bearing.

EXPANSION SHOE SETTINGS

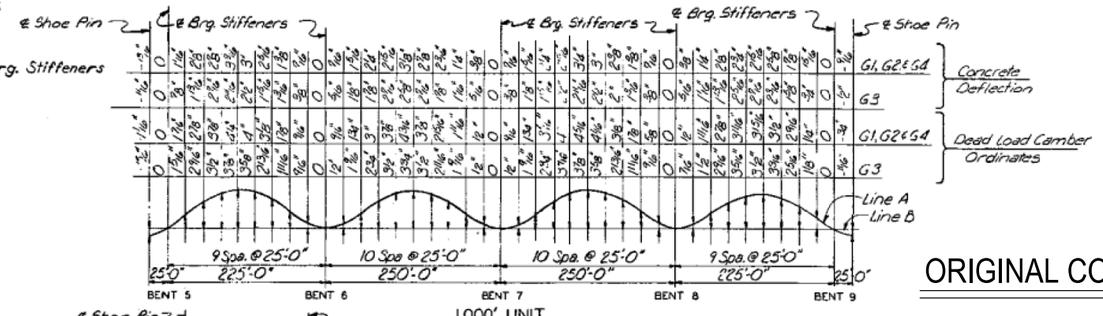



850' UNIT

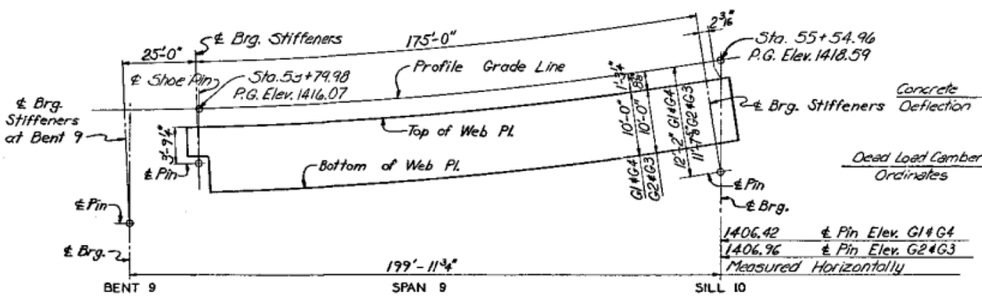



GIRDER ELEVATION

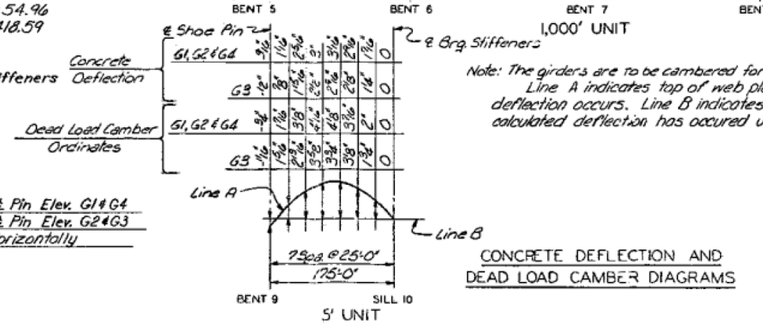
Note: Field Splice flange plates and intermediate stiffeners not shown.
Longitudinal Stiffener is 5"x ⅜" Pl.




1,000' UNIT




GIRDER LAYOUT




5' UNIT

Note: The girders are to be cambered for full dead load.
Line A indicates top of web plate before dead load deflection occurs. Line B indicates top of web plate after calculated deflection has occured under full dead load.

CONCRETE DEFLECTION AND DEAD LOAD CAMBER DIAGRAMS

## STRUCTURAL STEEL NOTES

Longitudinal dimensions are measured along top of girder web except as noted.

All field connections to be made with ⅞"ϕ High Strength Bolts unless otherwise shown.

Bearing Stiffeners and Intermediate Stiffeners are normal to grade.

Intermediate Stiffeners shall be continuous between flanges and are to be equally spaced between floorbeams except slight shifting will be permitted to clear Shop and Field Splices.

Longitudinal Stiffeners are on the outside face of girders and are discontinuous at Bearing Stiffeners, Intermediate Stiffeners and Field Splices as shown.

For details of 14 WF Expansion Device Support, 14 WF Diaphragm and Brackets, see Sheet 12.

For details of Girder Shoes, see Sheet 10.

For details of Roadway Expansion Devices, see Sheets 11 and 12.

P.G. indicates Profile Grade.

Jacking Stiffeners are provided on floorbeams to support steel dead load only at normal unit stresses (N.U.S.) at Sills and at 150% N.U.S. at Bents.

Additional shop web splices will be permitted subject to the approval of the Engineer.

For General Notes, see Sheet 3.

NOTES

For General Notes, see Sheet 3.
Work this sheet with Sheets 5 and 6.

# ORIGINAL CONSTRUCTION PLANS

## 175' SIMPLE SPAN PLATE GIRDER UNIT

FOR

## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN

STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266

OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W

BRULE COUNTY

SOUTH DAKOTA

DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

STR. NO. 08-061-094

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BRIDGE ENGINEER



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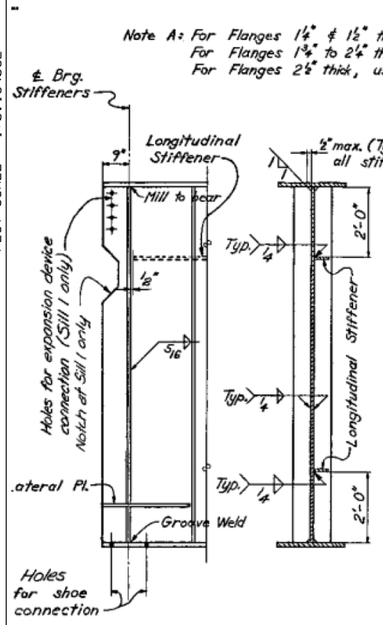
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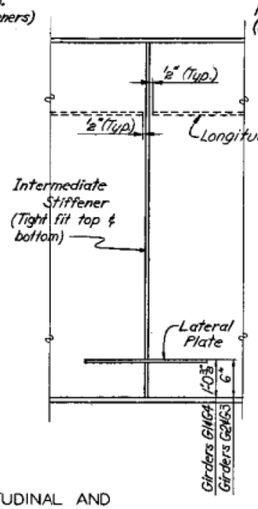
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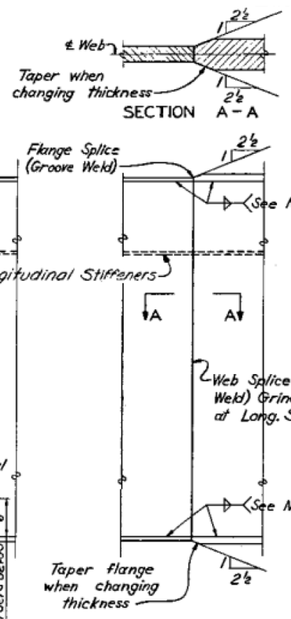
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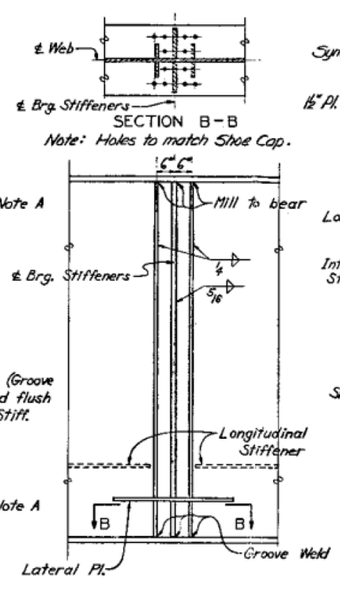

BEARING STIFFENERS AT SILLS 1 & 10



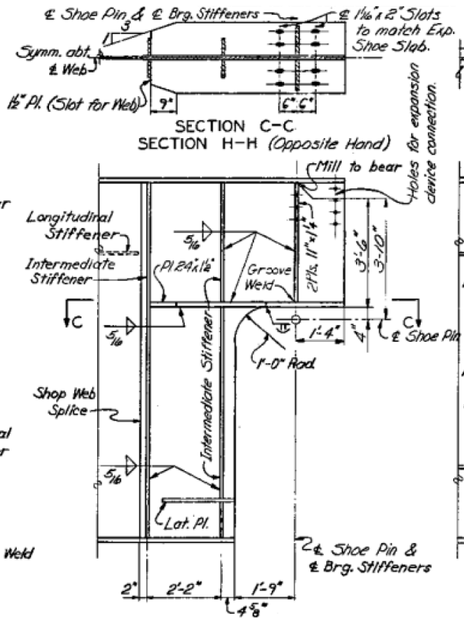

LONGITUDINAL AND INTERMEDIATE STIFFENERS



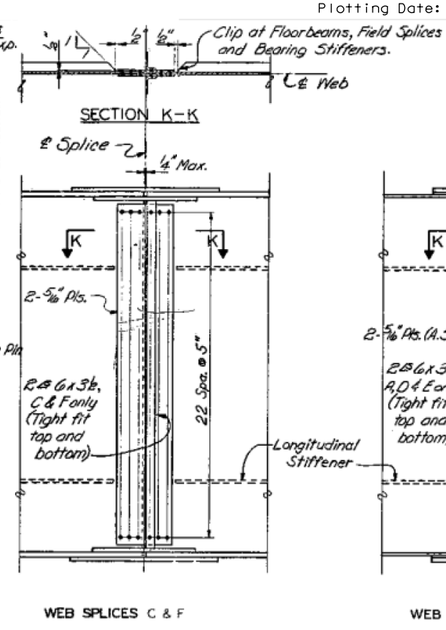

SHOP SPLICES



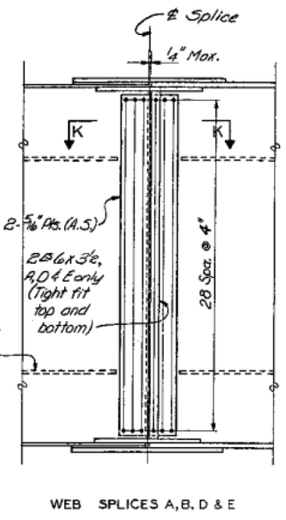

BEARING STIFFENERS AT BENTS 2 THRU 9



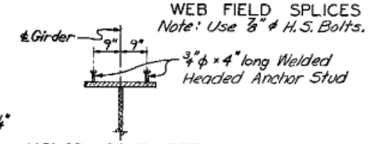

HINGED END 850' UNIT NEAR BENT 5



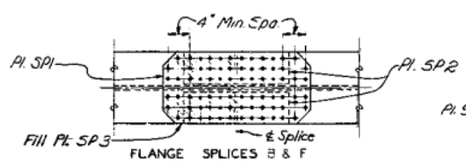

WEB SPLICES C & F



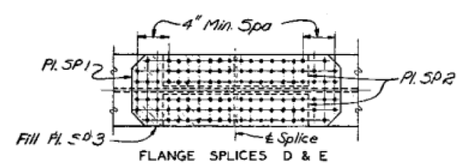

WEB SPLICES A, B, D & E




FLANGE SPLICE C




FLANGE SPLICES B & F




FLANGE SPLICES D & E

WEB FIELD SPLICES
Note: Use ⅞" ϕ H.S. Bolts.




ANCHOR STUD DETAIL

Note: Anchor Studs shall be welded in pairs to the top flange of all Girders at approximate 2-foot longitudinal intervals, except at flange field splices where they may be omitted.



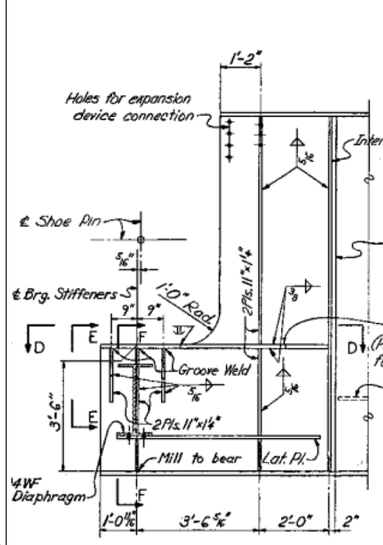

FLANGE SPLICE A

| SPLICE | PLATES | | |
|---|---|---|---|
| | SP1 | SP2 | SP3 |
| A | 24"x1" (A.S.) | 11"x⅝" (A.S.) | — |
| B | 24"x⅝" (A.S.) | 11"x⅜" (A.S.) | 24"x¼" |
| D | 24"x1⅛" (A.S.) | 11"x1" (A.S.) | — |
| E | 24"x1⅛" (A.S.) | 11"x1" (A.S.) | 24"x⅛" |
| F | 24"x1⅛" | 11"x1" | 24"x¼" |

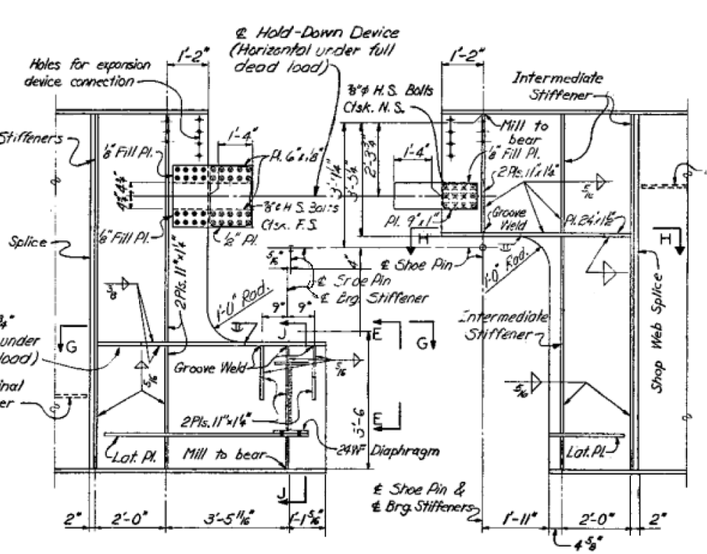
FLANGE FIELD SPLICES
Note: Use 1" ϕ H.S. Bolts.
Top and bottom splice same.

NOTES

For General Notes, see Sheet 3.
For Structural Steel Notes, see Sheet 7.



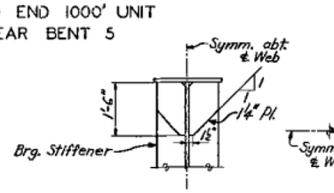

HINGED END 1000' UNIT NEAR BENT 5




HINGED END 1000' UNIT NEAR BENT 9

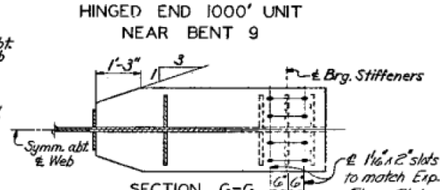



HINGED END 175' UNIT NEAR BENT. 9




VIEW E-E

Note: 24 WF Diaphragm not shown.




SECTION G-G
SECTION D-D Opposite Hand

SECTION F-F
SECTION J-J Opposite Hand

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CONSULTING ENGINEERS
ST. LOUIS, MISSOURI

# ORIGINAL CONSTRUCTION PLANS

## GIRDER DETAILS

FOR

2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN

STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266

OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W

BRULE COUNTY

SOUTH DAKOTA

DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

STR. NO. 08-061-094

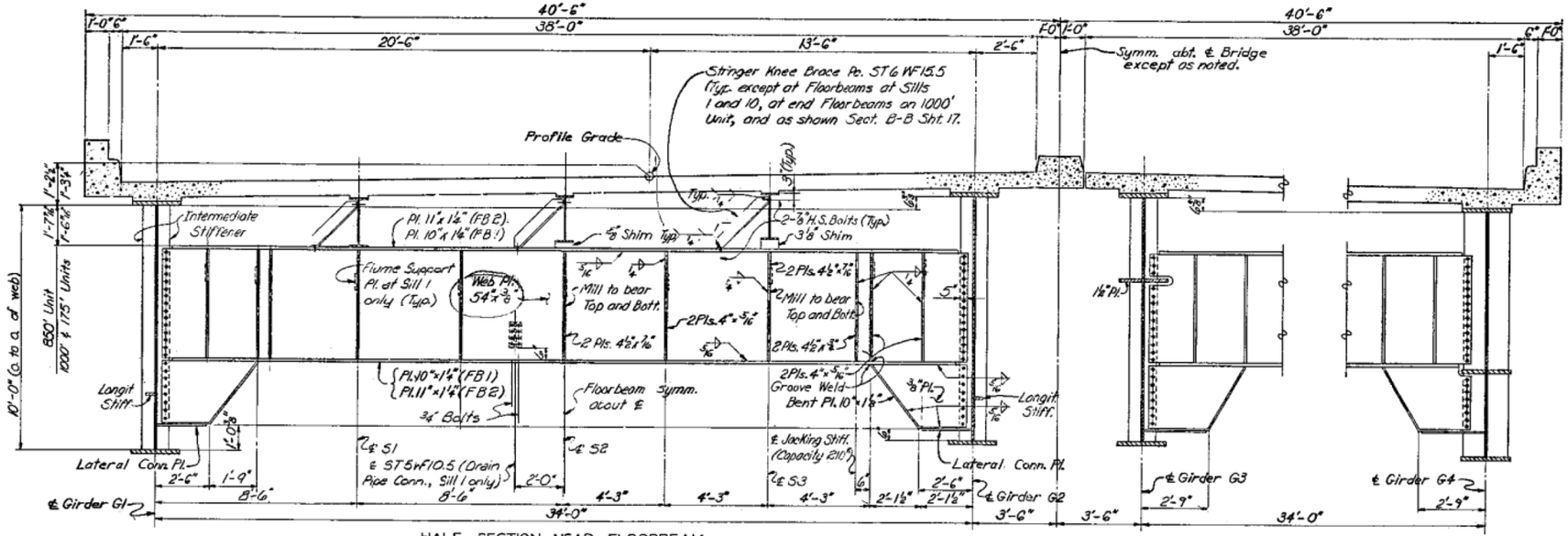
5 OF 12

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BRIDGE ENGINEER

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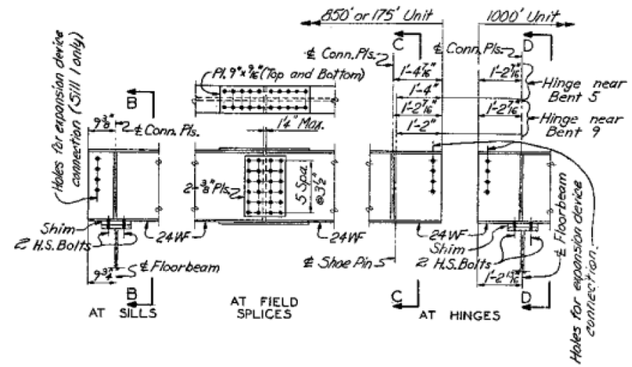

HALF SECTION NEAR FLOORBEAM

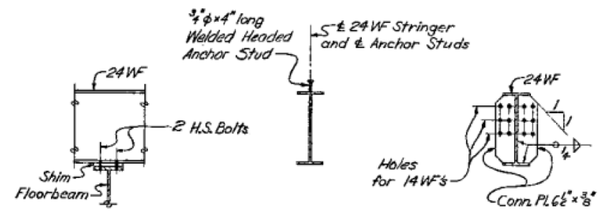
Note: Connection to Intermediate Stiffeners shown, connection to Bearing Stiffeners similar.
For location of Type FB2 Floorbeams see Framing Plans for 850' and 175' Units.
Jacking Stiffeners on Floorbeams at Sills and Bents only.
All stiffeners are tight fit except as noted.



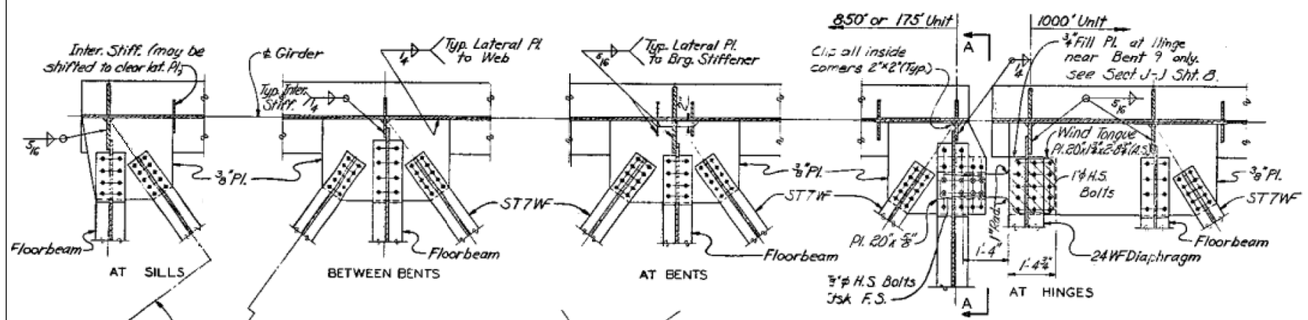

PART SECTIONS NEAR HINGES

Note: Bridge rail and barrier rail not shown.




## ROADWAY CROSS SECTIONS




## LATERAL BRACING

Note: Lateral Pls. may be groove welded to web and stiffeners where accessible from one side only.
Lateral Pls. shall be notched to fit around Brg. Stiffeners and Intermediate Stiffeners.

## STRINGER DETAILS

Note: Stringer field splices shall be located near the ¼ points between floorbeams. Stringers shall be a minimum of two panels between field splices.
Anchor Studs shall be welded to the top flange of all stringers at approximately 2'-foot intervals.

## NOTES

For General Notes see Sheet 3.
For Structural Steel Notes, see Sheet 7.

# ORIGINAL CONSTRUCTION PLANS

## FLOOR SYSTEM AND LATERAL BRACING

FOR

## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266
OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W

BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

STR. NO. 08-061-094

6 OF 12

APPROVED

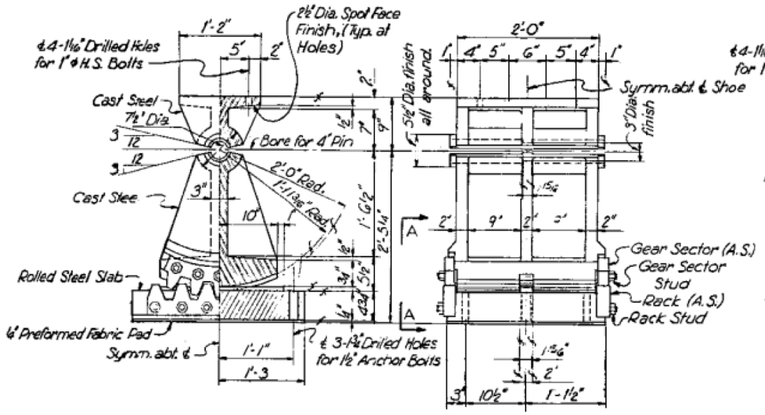
BRIDGE ENGINEER


PREPARED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
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ST. LOUIS, MISSOURI



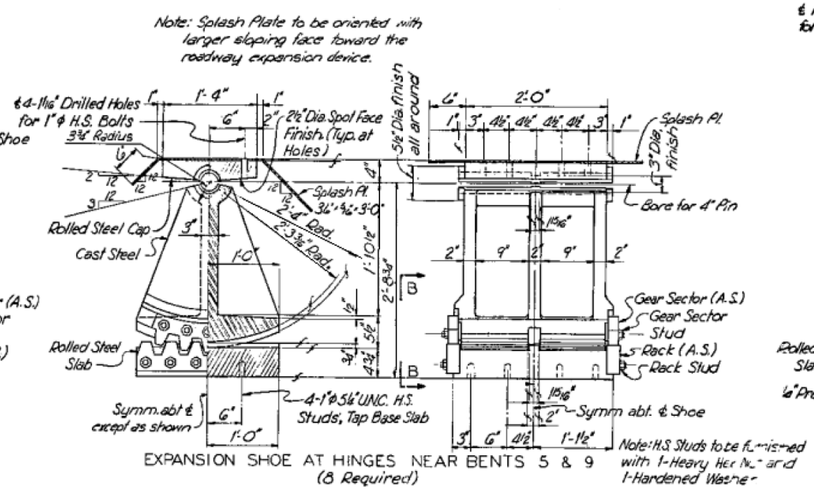
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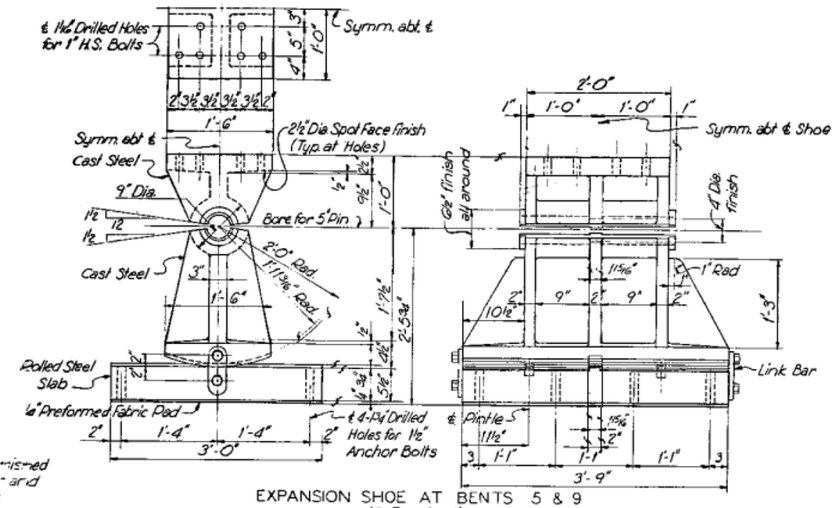

EXPANSION SHOE AT SILL 1
(4 Required)

Note: Splash Plate to be oriented with larger sloping face toward the roadway expansion device.

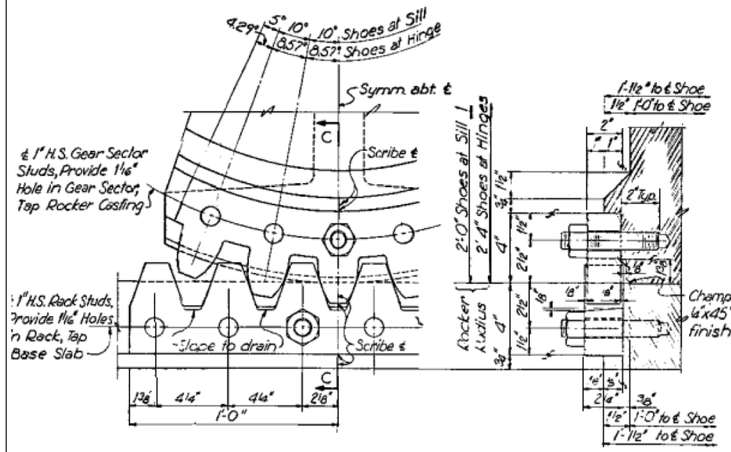



EXPANSION SHOE AT HINGES NEAR BENTS 5 & 9
(8 Required)

Note: H.S. Studs to be furnished with 1-Heavy Hex Nut and 1-Hardened Washer




EXPANSION SHOE AT BENTS 5 & 9
(8 Required)




PART VIEW A-A
Note: View B-B similar except as noted.

PART SECTION C-C

SHOE AT SILL 1

Gear Sector Data
48.00° P.D., 3 D.P., 36 tooth Gear, 5 tooth Sector, 4.189" C.P., 2" Width 20° Invol. Stub tooth.

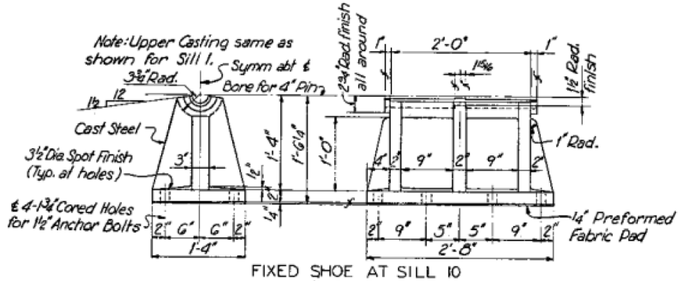
Rack Data
3 D.P., 4.189" C.P., 6 tooth section, 2¼" Width, 20° Invol. Stub Tooth.

SHOE AT HINGE

Gear Sector Data
56.00° P.D., 3 D.P., 42 tooth gear, 5 tooth sector, 4.189" C.P., 2" Width, 20° Invol. Stub tooth.

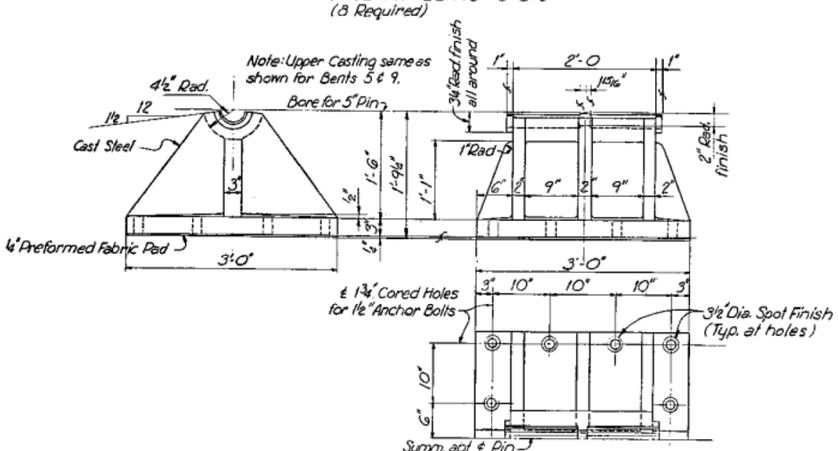
Rack Data
3 D.P., 4.189" C.P., 6 tooth section, 2¼" Width, 20° Invol. Stub Tooth.

Note: Upper Casting same as shown for Sill 1.

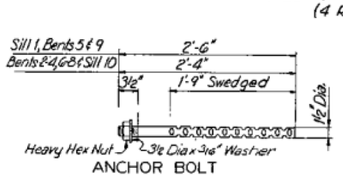



FIXED SHOE AT SILL 10
(4 Required)

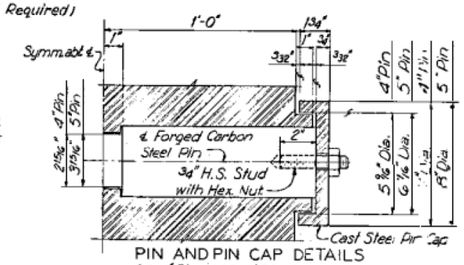
Note: Upper Casting same as shown for Bents 5 & 9.



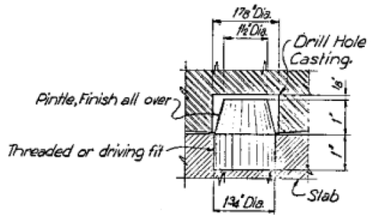

FIXED SHOE AT BENTS 2 THRU 4 & 6 THRU 8
(24 Required)



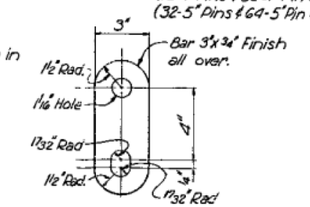

ANCHOR BOLT
(24 Required Sill 1)
(288 Required Bents 2-4 & 6-8)
(64 Required Bents 5 & 9)
(32 Required Sill 10)



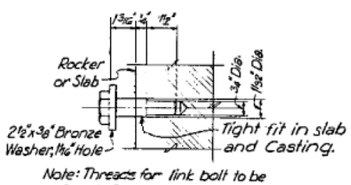

PIN AND PIN CAP DETAILS
(16-4" Pins & 32-4" Pin Caps Required)
(32-5" Pins & 64-5" Pin Caps Required)




PINTLE DETAIL
(16 Required)




LINK BAR
(16 Required)




Note: Threads for link bolt to be ¾ U.N.C. Class 2.

LINK BOLT
(32 Required)

## NOTES

Surfaces marked "f" or "finish" shall conform to finishes defined in the Standard Specifications 410.3.A.2.1.
Fillets on castings shall be ½" radius.
Expansion shoes shall be set in accordance with diagrams on sheet 7.
The rocker for expansion shoes shall be vertical at 45°F under full dead load.
Anchor Bolts to be placed in preformed wells in substructure units.
For General Notes, see Sheet 3.

## GIRDER SHOES
FOR
## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 I 90-6 (17)-266
OVER FRANCIS CASE LAKE SEC. 21 - T104N - R71W

BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

ORIGINAL CONSTRUCTION PLANS

STR. NO. 08-061-094

APPROVED

BRIDGE ENGINEER

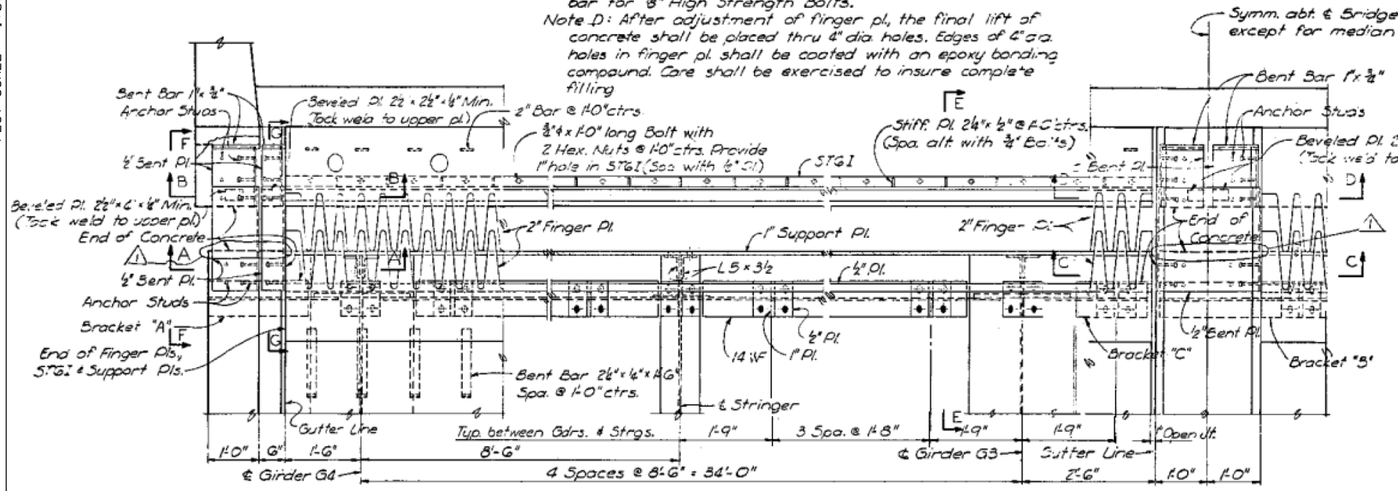


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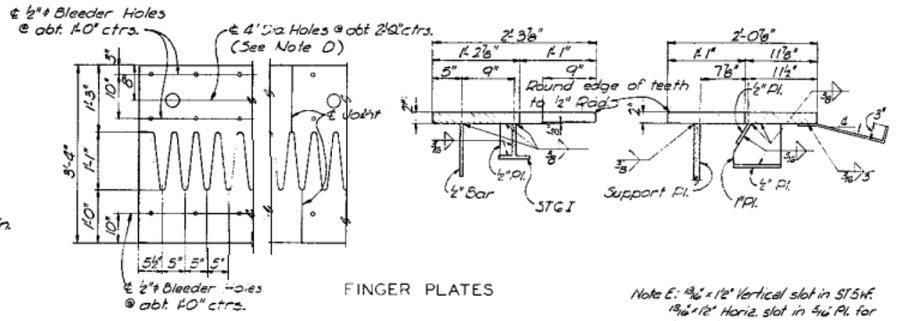
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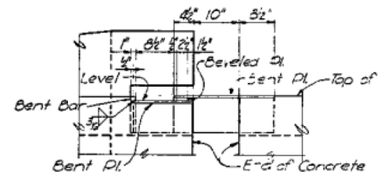
Note A: 13/16" hole in 14 WF or Girder & Stringer flange and 15/16" x 1 1/2" slots in 1/2" Pl. for 7/8" High Strength Bolts.
Note B: 13/16" hole in 1" Support Pl. and Girder & Stringer web and 15/16" x 1 1/2" slots in L 5 x 3 1/2 for 7/8" High Strength Bolts.
Note C: 13/16" hole in upper bar and 15/16" x 1 1/2" slot in lower bar for 7/8" High Strength Bolts.
Note D: After adjustment of finger pl, the final lift of concrete shall be placed thru 4" dia. holes. Edges of 4" dia. holes in finger pl. shall be coated with an epoxy bonding compound. Care shall be exercised to insure complete filling




PART PLAN AT SILL
Note: Flume and Splash Plate not shown.

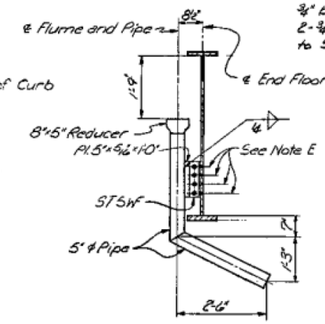



FINGER PLATES

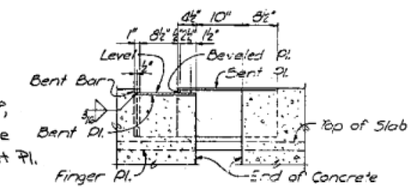



VIEW F-F

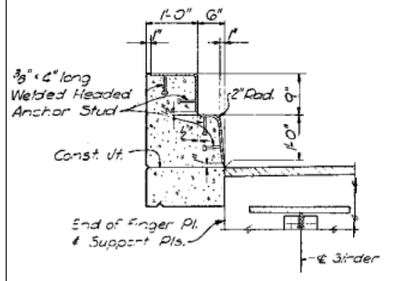
Note E: 13/16" x 1 1/2" Vertical slot in STSWF. 13/16" x 1 1/2" Horiz. slot in 4 1/2" Pl. for 3/4" bolts.
2-3/4" Bolts, Floorbeam web to STSWF.



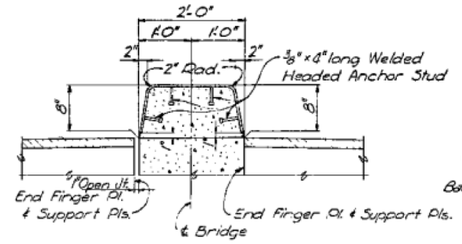

SECTION H-H
Note: Flume not shown.



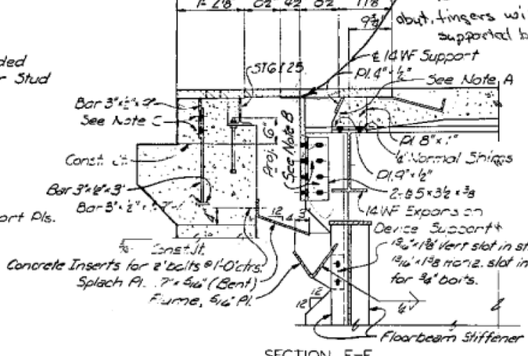

SECTION G-G
Note: Section thru Median similar.




SECTION A-A

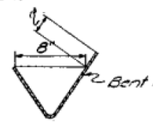



SECTION C-C




SECTION E-E
Note: Section shown near Girder. Section near Stringer similar.
Notch Splash Pl. to fit around girder web. Notch Flume to fit around Floorbeam Stiffeners.

Note: The gap in the expansion plates is shown for full dead load at an ambient temperature of 45° F. for positioning the device under steel dead load only the 8/16" gap should be 8/8" at 45° F.




FLUME

## EXPANSION DEVICE NOTES

Expansion Devices are shown in a normal position at a temperature of 45° F.

Finger plates may be fabricated from one piece over entire roadway width. If more than one piece is used the joint shall be located as shown with the approval of the Engineer.

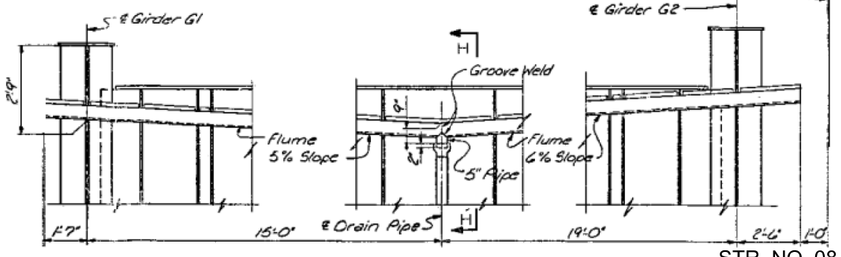
Flame cutting of finger pls. shall be as narrow as practicable and shall not exceed 4" in width. A mechanical guide shall be used to guide the cutting torch. All burrs shall be ground smooth.

Dimensions shown for finger pls. are based on 1/4" loss in grinding.

ORIGINAL CONSTRUCTION PLANS

## NOTES

All longitudinal dimensions are measured along grade.
For General Notes, see Sheet 9.
Work this sheet with Sheet 12.




ELEVATION FLUME AT SILL 1

## ROADWAY EXPANSION DEVICE AT SILL 1

FOR

## 2,030'-11 1/4" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266
OVER FRANCIS CASE LAKE — SEC. 21-T104N-R71W
BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

STR. NO. 08-061-094

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BRIDGE ENGINEER

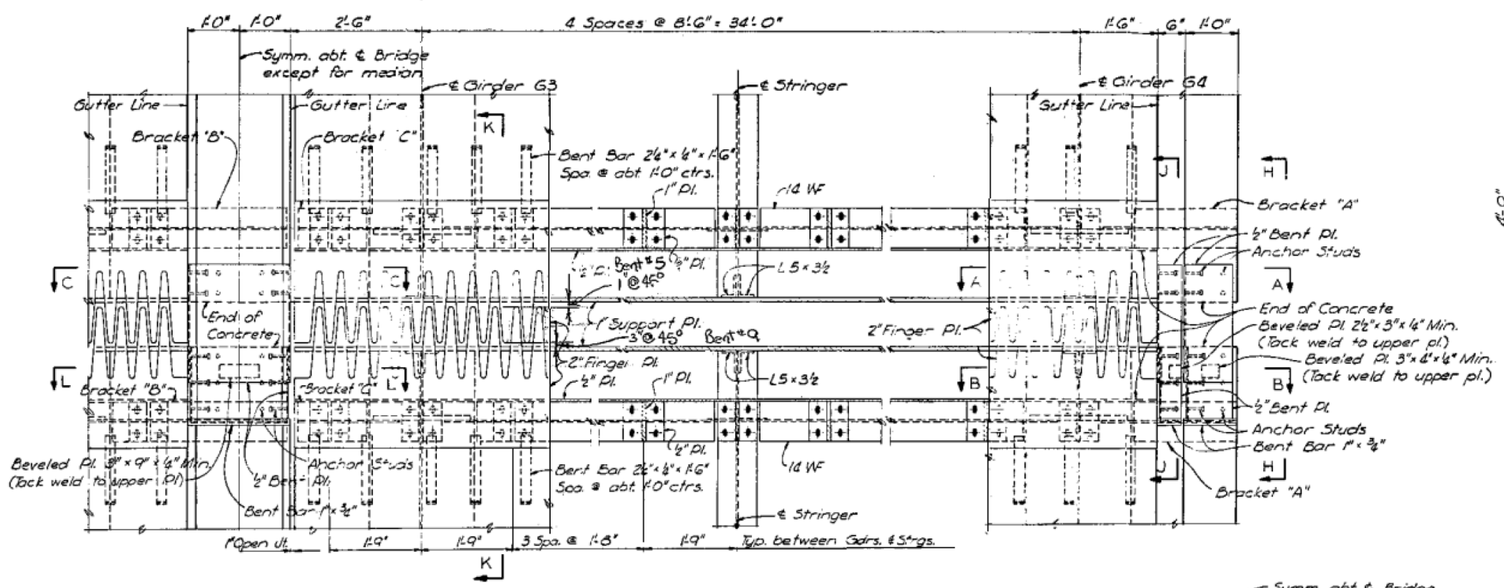
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ST. LOUIS, MISSOURI

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| REVISIONS | | | |

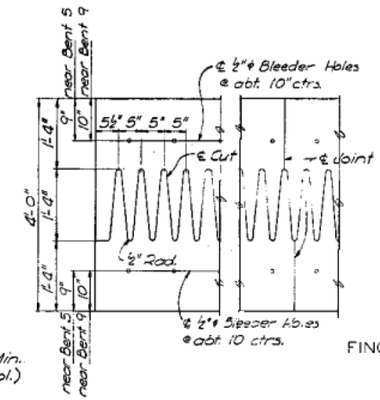
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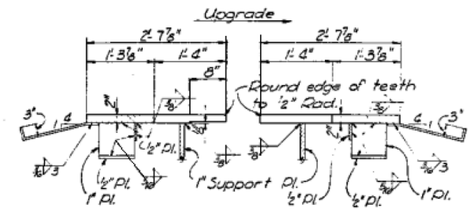
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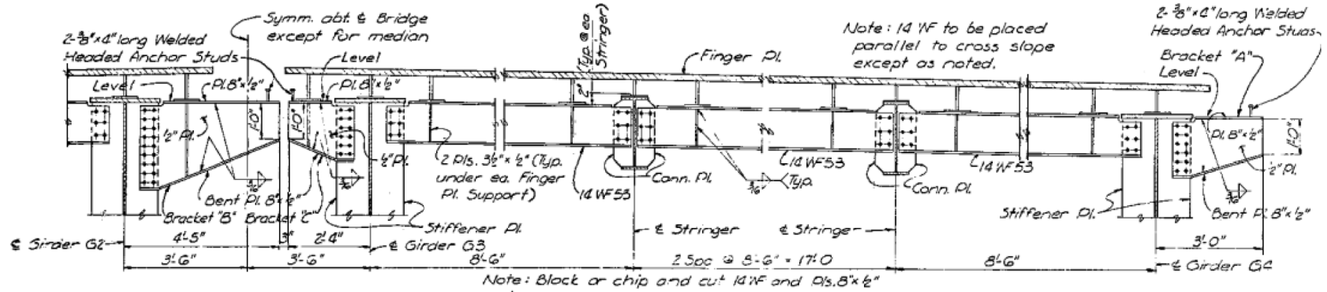



PART PLAN



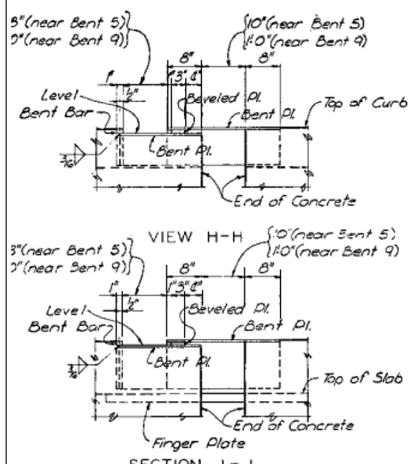

FINGER PLATES



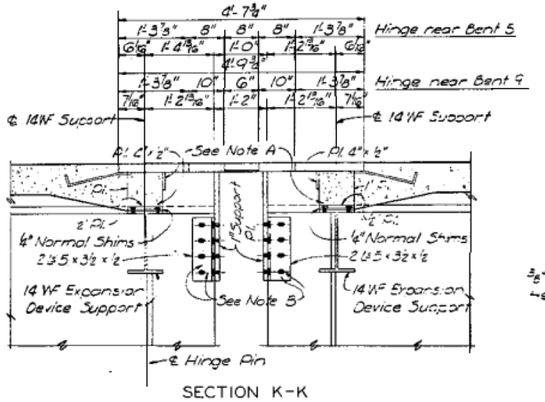

14WF EXPANSION DEVICE SUPPORT AND 14WF DIAPHRAGM

Note: Expansion Device Support at Sill 1 shown. Supports at Hinge near Bents 5 & 9 similar. Diaphragm at Sill 10 same except for Finger Pl. Supports and Stiff. Pls.



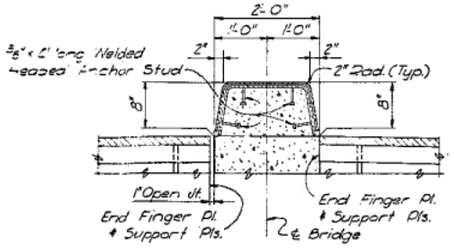

SECTION J-J

Note: Section thru Median similar.




SECTION K-K

Note: Section shown near Girder Section near Stringer similar.




SECTION L-L

Note: The gap in the expansion plates is shown for full dead load at an ambient temperature of 45°F. For positioning the devices under steel dead load only the 8" gap for the device near Bent 5 should be 7⅞" at 45°F, and the 10" gap for the device near Bent 9 should be 9⅞" at 45°F.

Note A: 5/16" hole in 14 WF or Girder & Stringer flange and 13/16" x ½" slots in ½" Pl. for ⅞" High Strength Bolts.
Note B: 13/16" hole in 1" Support Pl. and Girder or Stringer web and 15/16" x ½" slots in L 5 x 3½ for ⅞" High Strength Bolts.

NOTES

All longitudinal dimensions are measured along grade.
For General Notes, see Sheet 3
For Expansion Device Notes, see Sheet 11.
Work this sheet with Sheet 11.

# ORIGINAL CONSTRUCTION PLANS

## ROADWAY EXPANSION DEVICE NEAR BENTS 5 AND 9

FOR

## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN
STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266
OVER FRANCIS CASE LAKE — SEC. 21-T104N-R71W

BRULE COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

STR. NO. 08-061-094



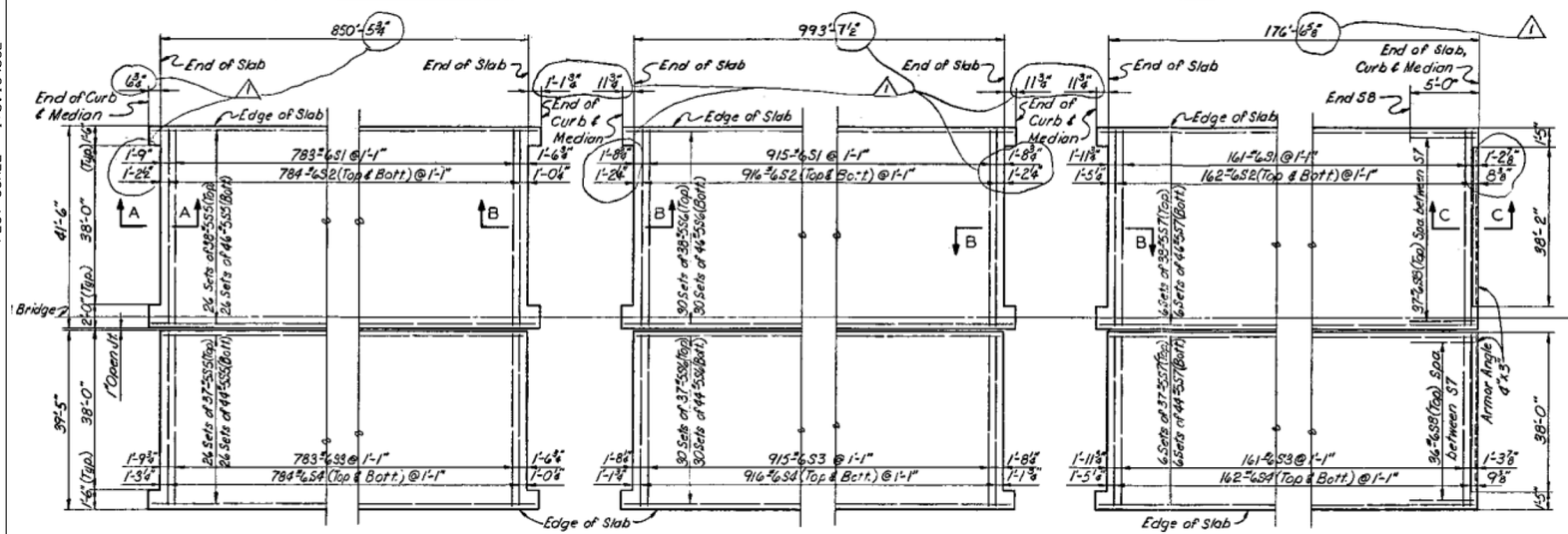
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BRIDGE ENGINEER

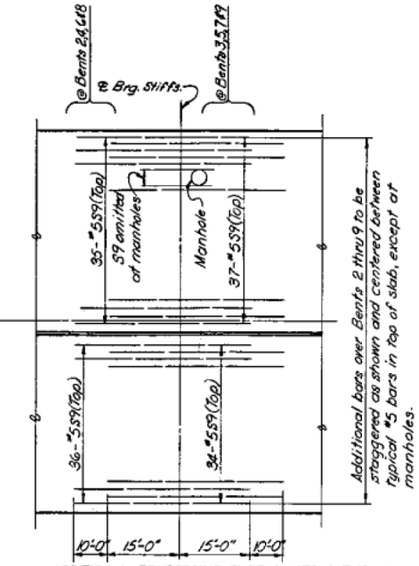
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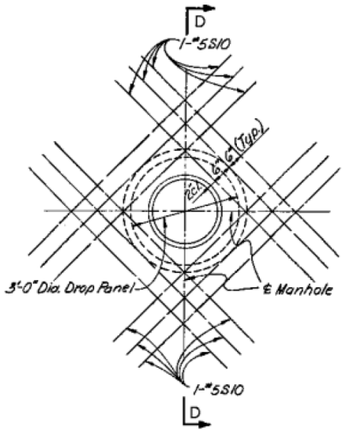



PLAN



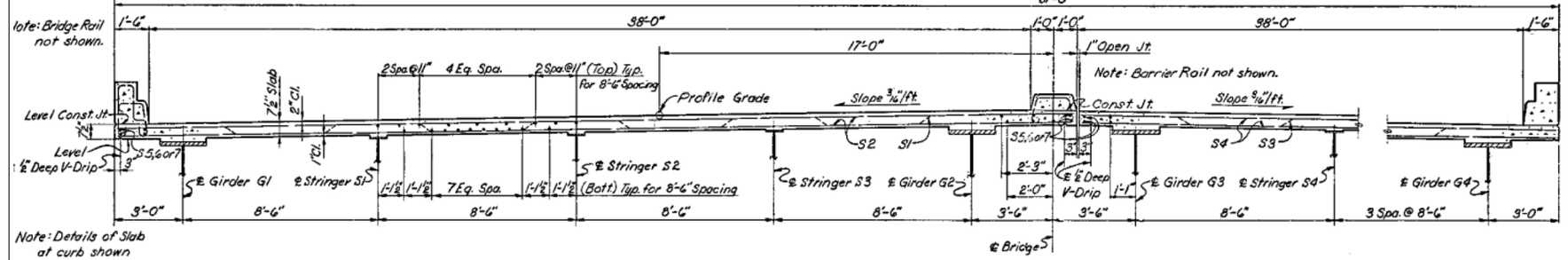

ADDITIONAL REINFORCING OVER BENTS 2 THRU 9

*Note: Shown for Bent 2, other Bents similar.*

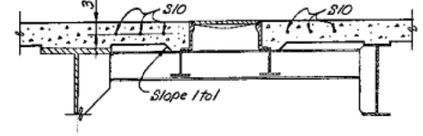



REINFORCING AT MANHOLE

*Note: For Location of Manholes, see Sheet 14. Normal Slab reinforcement shall be cut or bent as required to clear manhole frame.*




TYPICAL CROSS SECTION




SECTION D-D

# ORIGINAL CONSTRUCTION PLANS

## NOTES

*For General Notes see Sheet 3.*

*Longitudinal dimensions are measured along Profile Grade.*

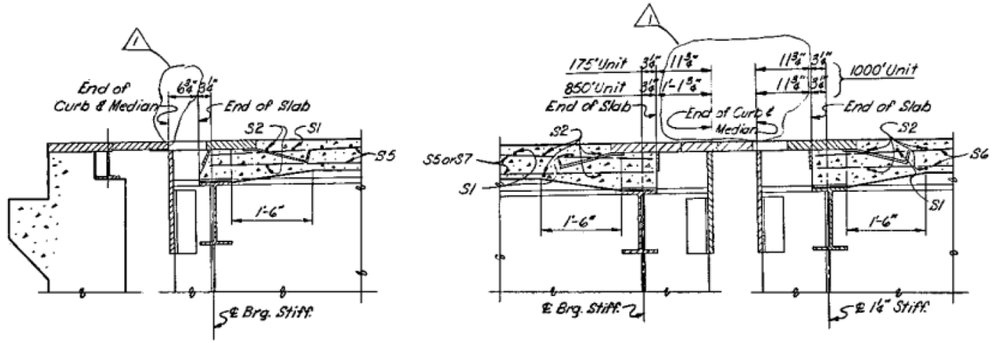
*For details and reinforcement in curb and median, see Sheet 14.*

*For Slab Forming Elevations and Slab Placing Sequence, see Sheet 16.*

*For location and details of Light Standard Supports, see Sheet 14.*

*Weight of Armor Angle for slab (950#) included in Structural Carbon Steel.*

*For Bar List, see Sheet 18.*

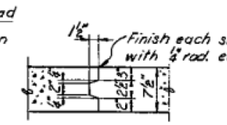



SECTION A-A

SECTION B-B

SECTION C-C

*Note: For Details of Armor Angle see Sheet 4.*




TRANSVERSE CONST. JT.

*Note: Key to extend full length of Joint.*

## SLAB DETAILS

FOR

## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN

STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266

OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W

BRULE COUNTY

SOUTH DAKOTA

DEPARTMENT OF HIGHWAYS

HS 20-44 & ALT.

STR. NO. 08-061-094

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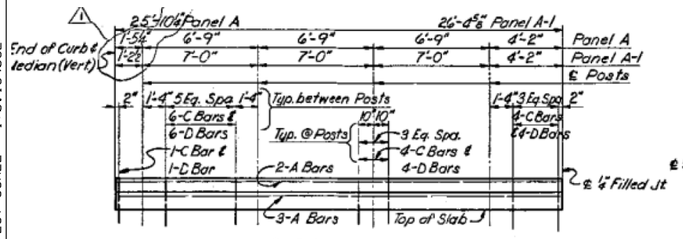
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ST. LOUIS, MISSOURI

| No. | BY | DATE | DESCRIPTION |
|---|---|---|---|
| 1 | D.A. | 8-14-72 | Concrete Dimensions |

REVISIONS

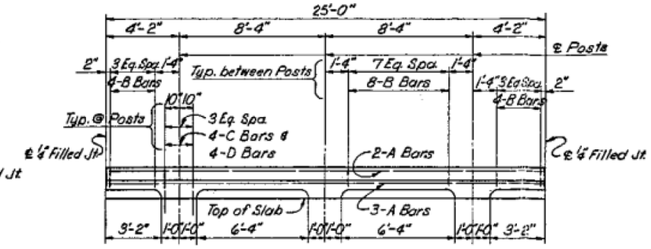
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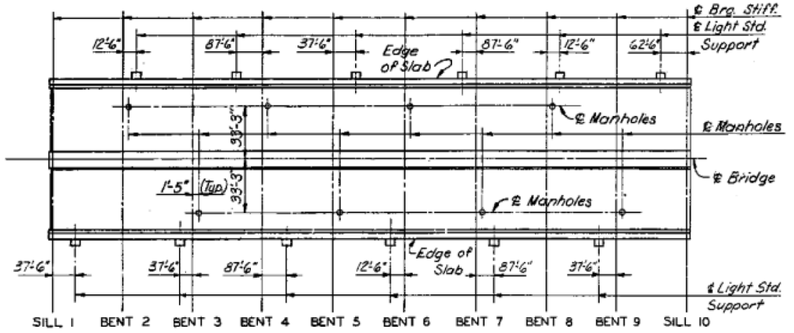



PANELS A AND A-1

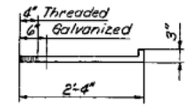
Note: Panel A shown. Panel A-1 opposite hand.

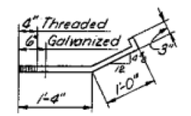



PANEL C



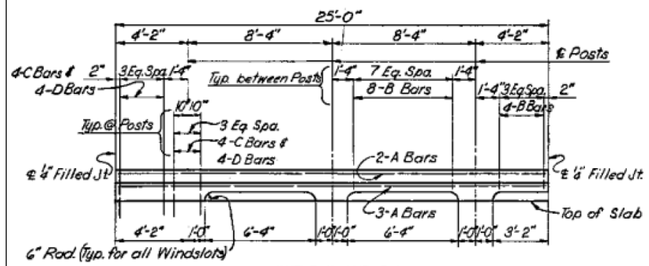

LOCATION PLAN FOR LIGHT STANDARD SUPPORTS AND MANHOLES



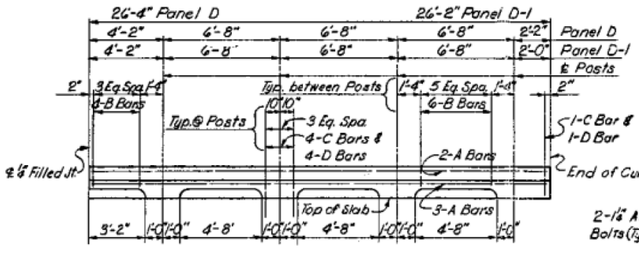

ANCHOR BOLTS

Note: Anchor Bolts to be furnished complete with 2-Galv. Hex nuts and 1-Galv. washer.



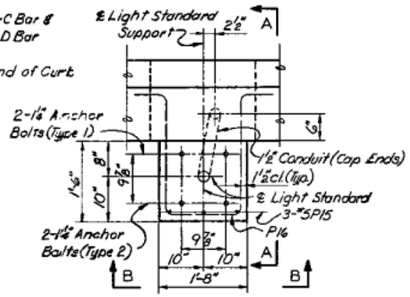

PANELS B AND B-1

Note: Panel B shown. Panel B-1 opposite hand.



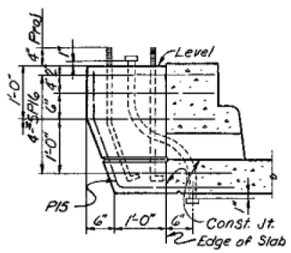

PANELS D AND D-1

Note: Panel D shown. Panel D-1 opposite hand.



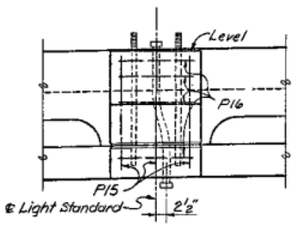

PLAN

Note: Anchor bolts shall be placed symm. abt. ℄ Light Standard.




SECTION A-A

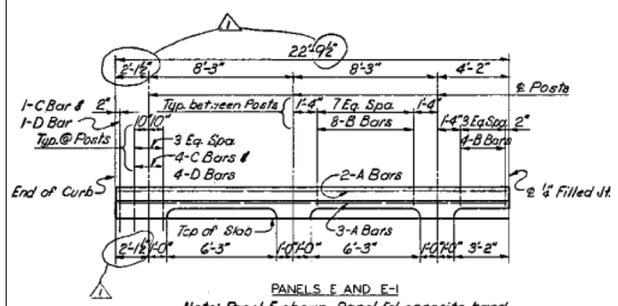
Note: Slab and curb reinforcing steel not shown.




VIEW B-B

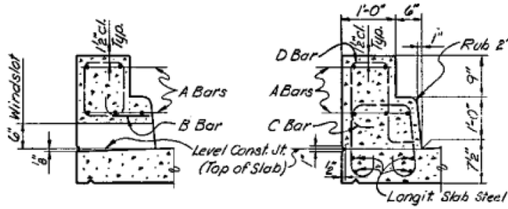
LIGHT STANDARD SUPPORT DETAILS

Note: Conduit shall be rigid galvanized steel conduit meeting the requirements of ANS. C80.1-1966. Fittings shall conform to ANS. C80.4-1966.




PANELS E AND E-1

Note: Panel E shown. Panel E-1 opposite hand.

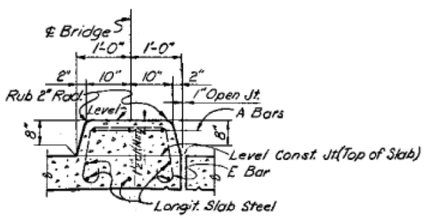



SECTION THRU CURB AT WINDSLOTS

Note: Details not shown same as Section thru Curb.

SECTION THRU CURB

Note: Transverse Slab Steel not shown.

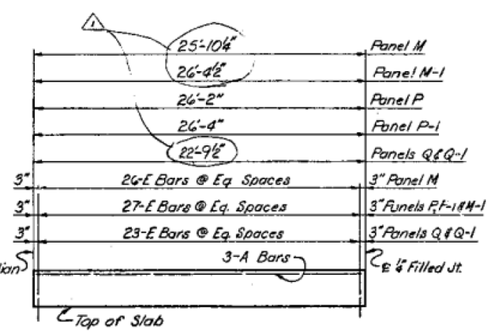



SECTION THRU MEDIAN

Note: Transverse Slab Steel not shown.

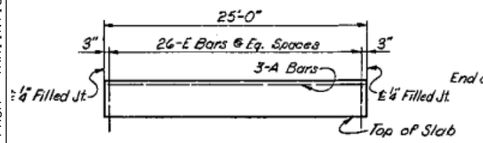
ELEVATION OF CURB PANELS

Note: Bridge Rail not shown.




PANELS M, M-1, P, P-1, Q & Q-1

Note: Panels M, P, & Q shown. Panels M-1, P-1, & Q-1 opposite hand.




PANEL N

ELEVATIONS OF MEDIAN PANELS

Note: Barrier Rail not shown.

BARS REQUIRED PER PANEL

| | Panel | Panels Req'd | A Bars | E Bars | C Bars | D Bars | E Bars |
|---|---|---|---|---|---|---|---|
| Curb | A | 2 | 5-#5P1 | —— | 39-#5P8 | 39-#4P9 | —— |
| | A-1 | 2 | 5-#5P2 | —— | 39-#5P8 | 39-#4P9 | —— |
| | B | 2 | 5-#5P3 | 2C-#4P7 | 16-#5P8 | 16-#4P9 | —— |
| | B-1 | 2 | 5-#5P3 | 2C-#4P7 | 16-#5P8 | 16-#4P9 | —— |
| | C | 146 | 5-#5P3 | 24-#4P7 | 12-#5P8 | 12-#4P9 | —— |
| | D | 2 | 5-#5P4 | 22-#4P7 | 17-#5P8 | 17-#4P9 | —— |
| | D-1 | 2 | 5-#5P5 | 22-#4P7 | 17-#5P8 | 17-#4P9 | —— |
| | E | 2 | 5-#5P6 | 2C-#4P7 | 13-#5P8 | 13-#4P9 | —— |
| | E-1 | 2 | 5-#5P6 | 2C-#4P7 | 13-#5P8 | 13-#4P9 | —— |
| Median | M | 1 | 3-#5P1 | —— | —— | —— | 26-#5P10 |
| | M-1 | 1 | 3-#5P2 | —— | —— | —— | 27-#5P10 |
| | N | 75 | 3-#5P3 | —— | —— | —— | 26-#5P10 |
| | P | 1 | 3-#5P5 | —— | —— | —— | 27-#5P10 |
| | P-1 | 1 | 3-#5P4 | —— | —— | —— | 27-#5P10 |
| | Q | 1 | 3-#5P6 | —— | —— | —— | 23-#5P10 |
| | Q-1 | 1 | 3-#5P6 | —— | —— | —— | 23-#5P10 |

NOTE: DO NOT SCALE THIS DRAWING, FOLLOW DIMENSIONS.

# ORIGINAL CONSTRUCTION PLANS

NOTES

For General Notes, see Sheet 3.

For Location of railing anchor bolts and Location of Curb and Median Panels see Sheet 15.

For Bar List, see Sheet 18.

The cost of conduit with cops and anchor bolts with nuts and washer shall be included in the unit price bid for Reinforcing Steel.

## CURB AND MEDIAN DETAILS

FOR

## 2,030'-11¼" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN

STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266

OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W

BRULE COUNTY

SOUTH DAKOTA

DEPARTMENT OF HIGHWAYS — HS 20-44 & ALT.

STR. NO. 08-061-094

| No. | BY | DATE | DESCRIPTION |
|---|---|---|---|
| 1 | O.A. | 8-14-72 | curb dimensions |

REVISIONS

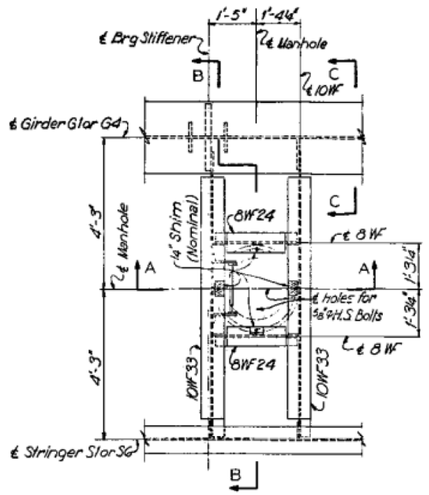
APPROVED

BRIDGE ENGINEER



PREPARED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
CONSULTING ENGINEERS
ST. LOUIS, MISSOURI

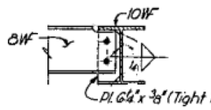
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FRAMING PLAN FOR MANHOLE

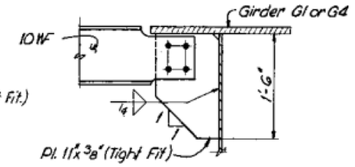
*Note: See Sheet 14 for Manhole Locations.*

*Note: Block or chip and cut 10WF and 8WF where necessary.*

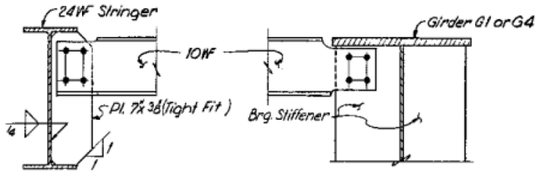



DETAIL A

(Typ. for 8WF connection.)



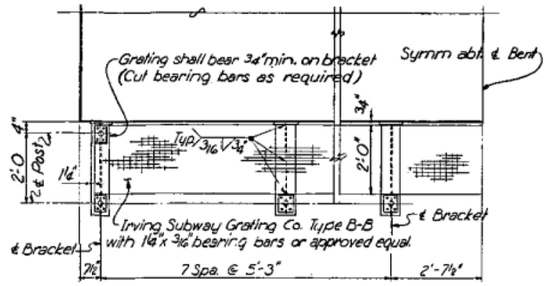

SECTION C-C



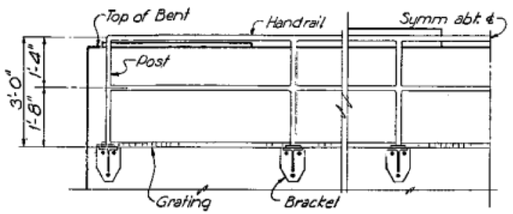

DETAIL B

(Typ. for 10WF connection to stringer.)

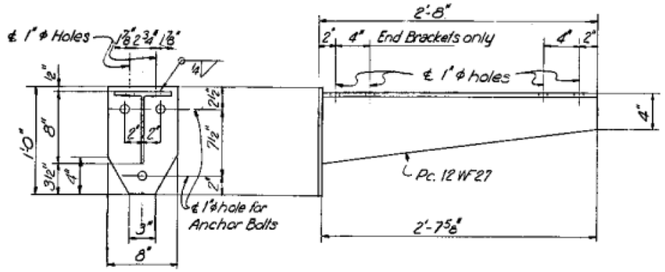
DETAIL C



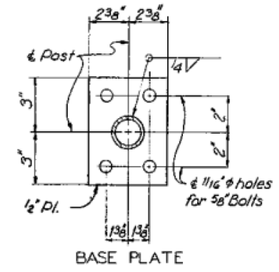

PLAN




ELEVATION




BRACKET




BASE PLATE

## INSPECTION WALKWAY NOTES

*Use 1½" ø Standard Pipe for rails and 1½" ø Extra Strong Pipe for posts (All welded type).*

*All railing including posts, base plates and bolts shall be galvanized.*

*Pipe handrail to be fabricated in convenient lengths for handling and shipping. Field splices in the railings shall be welded, ground smooth and galvanized in accordance with the Special Provisions "Galvanized Surface (Repair)."*

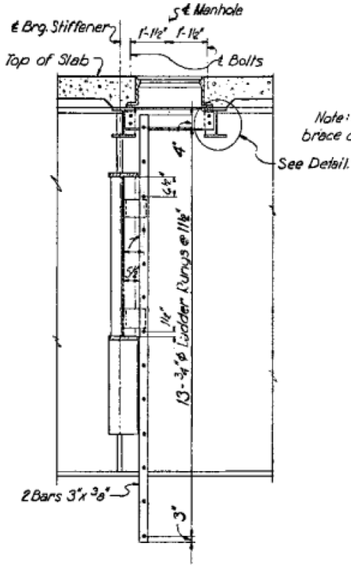
*The bid item "Pipe Handrail 1.5" shall include rails, posts, base plates and bolts fabricated and erected.*

*Walkway grating and brackets shall be painted in accordance with the Special Provisions.*

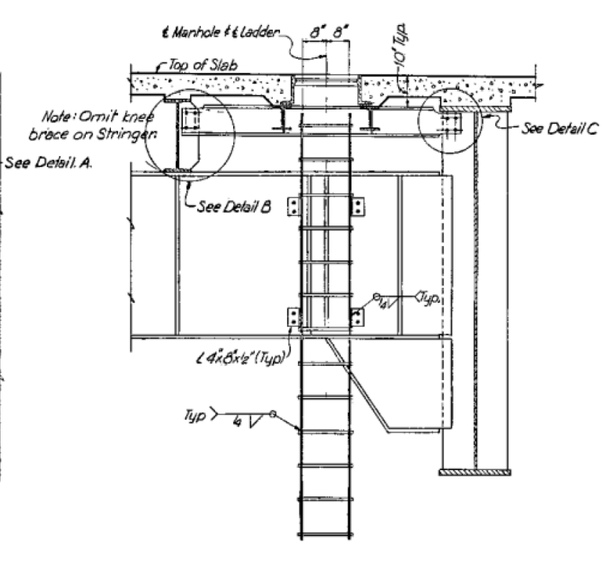
*Weight of walkway grating and brackets (18,248 lbs.) included in Structural Carbon Steel.*

## INSPECTION WALKWAY AT BENTS 2 THRU 9

*Walkway to be fastened to East Face of Bent Caps with ¾" ø Anchor Bolts in place. Anchor Bolts are placed by others.*




SECTION A-A




SECTION B-B

*Note: Manhole Frame with Solid Lid to be type R1762 as manufactured by Neenah Foundry or approved equal. Weight included in Structural Carbon Steel.*

MANHOLE AND LADDER

*Note: For Structural Steel Notes, see Sheet 7.*

PREPARED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
CONSULTING ENGINEERS
ST. LOUIS, MISSOURI

## ORIGINAL CONSTRUCTION PLANS

INSPECTION WALKWAY DETAILS

FOR

2,030'-11½" WELDED PLATE GIRDER BRIDGE

TWO 38'-0" ROADWAYS — 2'-0" MEDIAN

STA. 35+26.77 TO 55+57.71 — I 90-6 (17)-266

OVER FRANCIS CASE LAKE — SEC. 21 - T104N - R71W

BRULE COUNTY

SOUTH DAKOTA

DEPARTMENT OF HIGHWAYS — HS20-44 & ALT.

STR. NO. 08-061-094

APPROVED

BRIDGE ENGINEER




PLOT SCALE - 1:0.169082

PLOTTED FROM - TRM1INT16

PLOT NAME - 13

FILE - ...\PRJ2027\BRUL0A5E\OCPS.DGN

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.